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Abacus, the tree for the I.H.U.Campus

Nikoleta Tsikoti

SCHOOL OF ECONOMICS, BUSINESS ADMINISTRATION & LEGAL STUDIES

A thesis submitted for the degree of

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Thessaloniki – Greece

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January 2015
Thessaloniki - Greece

Abstract

When the designer first visited the International Hellenic University, she noticed the vast empty field, an abandoned campus used as parking place, surrounding two architectural indifferent buildings. Moreover, every time she wanted to communicate the start of her Master studies, very few people seemed to know the locus of I.H.U., many of them assuming that it might be at the Aristotle's University premises.

A landmark, an emblem, a point of reference was missing although the University is built on the junction of the roads to the Macedonia international airport and to Chalkidiki, clearly visible by the people driving by.

Only a small internal yard in front of the cafeteria was thought for students to spend the free time between the demanding courses by standing around, talking and drinking coffee. No trees, or greenery, no suggestion for a brief stress relief activity were offered.

The initial idea popped up during the ecological workshops she offered as a social club activity and was considered provoking: design a covering using renewable materials and items, beyond their conventional use, suspended over a frame or skeleton in order to create a strong visual impression of a daring display at the I.H.U. campus.

Her intention was to produce an experience in which the viewer can be engaged decoding new meanings and ideas by a direct interaction with the various elements of the object to start an individual "dialogue" with the concept for the I.H.U. campus.

An exciting blend of *architectural design and art installation*, an innovative work that can be rearranged and redesigned according to the mood of the students, the workshop participants, users, invited artists for seminars etc., by creating a *large-scale interactive construction* in order to incorporate natural and renewable elements, as *sculptural furniture* and *equipment to stimulate and support outdoor activities.*

Nikoleta Tsikoti , 31/1/2015

Acknowledgements

First of all, I want to thank my “fellow student from Karlsruhe”, Professor Nikolas Moussiopoulos for supporting me from the first moment I decided to attend the Strategic Product Design Master studies. He has been always “a mail, or a phone call away”, personally or Dr.Charissios Achillas and Dr.Dimitris Tzetzis have been by my side and I am grateful for their advises.

I want to thank Professor Panagiotis Kyratsis for his support during my Consulting Project,

Sergios Fotiadis for the Product Development Process and “The art of looking sideways” thinking mode and

Dr.Fotis Fillipopoulos, who introduced me to the alternative view on emotional design through the innovating principles of Consumer Behaviour, and changed the way I am thinking and designing.

During my dissertation, my supervising Professor Nikos Tsinikas has strongly influenced the design process through his precious advices and Dr.Ioanna Symeonidou has always assisted my CAD attempts.

Thanking them is the least I can do.

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Stella Parisi, Tasos Chatzikonstantinou and Ioannis Poimenidis have strongly encouraged and advised me during my studies. I will always consider them as friends and family.

Contents

Introduction

The proposal was thought to motivate students to design and interact in a playful mode with ephemeral installations functioning as the Emblem of the I.H.U., which will create a strong visual impact on people driving by as a visual “point of reference”.

In addition, as the trend of “going green” takes over society, and concerns about waste reuse is constantly growing, the concept should be a really new and avant-garde perception about the way how artistic human interaction can bring new life and appearance to a “metal frame equipped with common form modules”.

The aim of the dissertation is setting the boundary of the outdoor area and suggesting a big scale version of a Green solar-powered Installation, using accents of Greek Cycladic architecture, expressing the International Hellenic University‘s progressive and alternative educational spirit.

The designer's personal insights on “the campus fun-functional sculpture” was to create structures that contribute to the conversation and the interaction for the re-conception of the campus arrangement and the impact it might have in the communal life of the IHU students, alumni, professors, and administrative staff, and the invited artists for the summer camp or workshops.

What if the IHU campus installation became part of the identity of University?

How will behaviour change if someone could use the free time during the breaks of the courses, and the social club seminars to be creative in order to play and relax?

As everyone has a unique way of interpreting the world, owning a totally different personal mindset, the designer’s intension is to influence the stakeholder’s psychological state in order to turn the proposal from a common outdoor installation into an interactive communicative and artistic experience that provides added value for the University worldwide.

The vision for the sophisticated society of IHU apart from the buildings and the offered Master courses is to move further from basic functional needs, establish ways of connecting by creating emotional bonds as a type of synergy between people. The concept on the campus has to transcend clear messages of the International definitely Greek (Hellenic) University, addressing people interested to attend a Master course from all over the world.

The architect's thoughts on the role of the design proposal nowadays, and what has influenced her approach is that products have to be created according to people's desires after user researches, gathering data and information about their needs, wants and preferences but at the same time beyond imagination. "If I had asked my customers what they wanted, they would have wanted a faster horse", (Henry Ford, 1908). The object has to be an expression of our society in its contemporary historical period and of its cultural and economic development but at the same moment a concept for an improvement. "We don't look at market needs. We make proposals to people" stated Ernesto Gismondi, chairman of Artemide, the leading manufacturer of lamps. "It is essential to build brands that appeal directly to the individual's emotional state, heed and aspirations and trigger an emotional response. It is more important to create relationships than objects, because emotion is the basis for meaningful differentiation" (Porter, 1990; 1998)".

In the dissertation "Proposal for the IHU campus", the concept is meant to convey important information, subconsciously attracting the potential students to prefer this specific University.

The advantages of the IHU towards the other Master courses offered from Universities in southern Europe will be expressed through design, keeping in mind to amplify the attraction points, influence the user's psychological state and promote an essential interplay associating this particular University with pleasant emotions, images, memories and experiences.

As people are driving by on the big roads to the airport or to Chalkidiki, a story has to be told in a couple of seconds to catch their attention and invite them to at least start an internet research for I.H.U. Original and eye-catching appearance, morphology and

aesthetics, form and colours, functionality and innovation in design, have to be used in order to appeal at all the human senses.

After the brainstorming meeting with the supervising Professor N.Tsinikas the designer started exploring forms, ideas and terms that would roughly define the outdoor concept.

The most influential data, pictures and concepts are in detail presented and fully referenced in the following Literature Review and commented by their creators or the designer.

Chapter 2: Literature Review

The design composed for the I.H.U. campus, will be determined by a number of factors such as consumer behavior axioms, neuroscience, the Golden ratio principles and the product development design process.

The landmark, the trees, the plastic waste stream, artists looking sideways at plastic trash and their modus operandi, public outdoor sitting installations, and buildings adopting sculptural forms have been the main inspirational depot.

The symbols and emblems used to operate as land marks for cities and Universities, the symbolism of the tree and the metaphors about the tree of Life and the tree of knowledge were explored, the environmental concerns and the artistic expression of the interplay between plastic debris and the option of reusing them as "second chance" raw materials have been intensely taken into account.

Useful for the concept generation have also been the outdoor public art objects, the sitting, gathering proposals and even the playscapes (play +landscape).

The "Abacus project" as a campus functional installation, has been inspired from all these parameters and the most relevant for the product development are presented, commented and evaluated in the following chapter.

2.1 The landmark

"Landmarks are a type of point reference, usually a simply defined physical object: building, store or mountain, singling out of one element. They are frequently used clues of identity and even of structure, the image of a given physical reality.

A striking landscape is the skeleton upon which many primitive races erect their socially important myths."(Lynch, 1960).

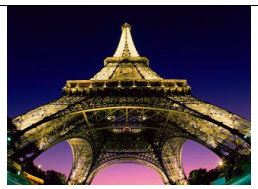
The IHU's visual perception is partial, fragmentary, a broad frame of reference is missing and it is hard to conceptualize it as a separate university.

There are no strong general symbols which would create a broad visual frame of reference. People are hardly aware of the crucial social role a vivid and integrated

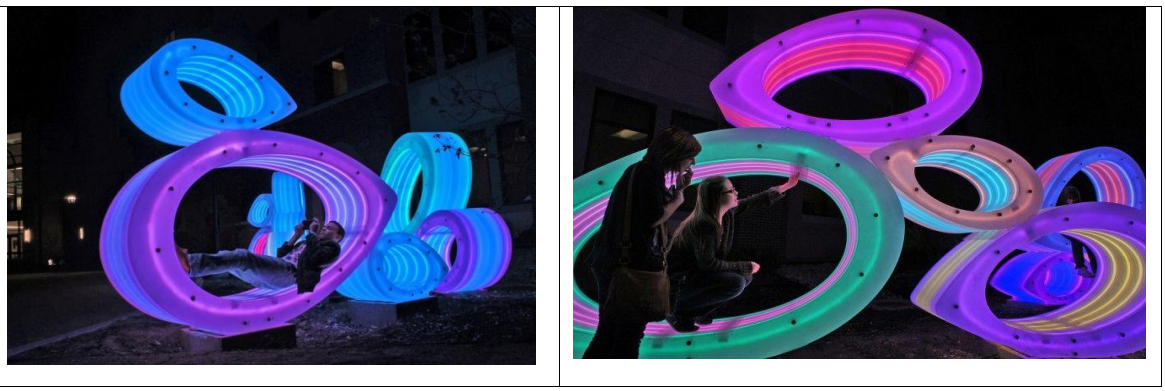
physical setting is playing, even though the need to recognize and pattern the surroundings has long roots in the past. This image has wide practical and emotional importance to the individual as it can provide the raw material for the symbols and collective memories of international communication.

A distinctive environment heightens the potential depth and intensity of human experience, the emotional satisfaction, the framework for contact or conceptual organization and the new depths that it may bring to everyday experience. Even though very often people are not aware of the potential value of a harmonious surrounding setting and the important sense of emotional security, by reshaping the outdoor environment of I.H.U. the designer intends to propose harmonious relationships to be established, the warm sense of belonging to the students and common memories of the time of the Master studies would be reinforced.

A. Landmarks in general: They are well known and bring in mind cities or countries, for example the White Tower in Thessaloniki, the Brandenburg Tor in Berlin, the Eiffel Tower in Paris, the little Mermaid in Copenhagen, the Opera House in Sydney, the Burj Al-Arab in Dubai etc.

B. Landmarks in Universities are very often placed as outdoor installations to revive the University campus and transcend strong visual signals.



Picture: JB Public Art's Fish Bellies Installation, Texas State University campus

Joe O'Connell and Blessing Hancock, the public art designer group created the LED lighting sculpture having in mind the ecological diversity of the San Marcos River.

The installation, called Fish Bellies, is created on the campus of the Texas State University, reflecting the development of a local school of fish, and represents the communicative atmosphere of the university. The installation encourages interaction and the illuminated oval structures transmit over the landscape the message of the river's unique ecology and biology.

Picture: Red sculpture on the Tel Aviv University campus.

Picture: The "M" circle, located on Campus Drive in South Campus of the University of Maryland College Park.

Picture: Clock Knot, by Mark di Suvero, 2007, The University of Texas at Austin

Clock Knot, a painted steel outdoor installation having dimensions 12, 5X6, 6X10, 66 m, is standing on the space between the Mechanical and Chemical Engineering buildings, demonstrating the principles of balance and force that apply equally in engineering and in dance.

Walking around Clock Knot produces constantly changing views, and moving under it creates the experience of the sculpture and its space lifting at the same time the imagination to play with its visual and verbal suggestions, offering new aesthetical and physiological sense.

Picture: Saltworks by Joe MacDonald, Arash Adel and students, 2011, at the Washington University in St. Louis

A giraffe's neck in the genetics was the abstract inspiration for the students at Washington University in St. Louis. Furthermore parametric design methods were used to design an adaptable public sitting installation for the university campus.

Instructors Joe MacDonald and Arash Adel challenged students to design, and construct "Saltworks" in 2011.

Picture:The Spinning Cube, by Tony Rosenthal, 2009, at the University of Michigan campus.

The cube is located on a patio at the University of Michigan campus and the interesting point is that everybody can spin it with the push of a finger. Even elementary-age school kids are capable of spinning the cube but the adult passersby enjoy and have fun as well playing with the interactive sculpture.

Picture: UNAM Central University City Campus Library , Universidad Nacional Autónoma de México , Mexico

Located in Mexico City the University façade is functioning as an outdoor painting or sculpture and a recognizable landmark of the University.

Picture: “Circle Dance”, by Tom Friedman, 2012, at Brown University’s campus

The installation, inspired by Henri Matisse’s painting, “La Dance”, illustrates the movement of eleven life-sized human figures holding hands in a circle. The sculpture triggers people to a multiple interactive engagement as for example a group of modern dance students who developed their final performance project involving the sculpture in their creative procedure.

Picture: Park and outdoor sculpture, 2008 by architect Richard Fleischman at Case Western Reserve University, Cleveland.

Nine curved blades of painted steel on a concrete pathway like blades of grass. The installation has been criticized as from certain viewpoints fails to function like a 3D sculpture.

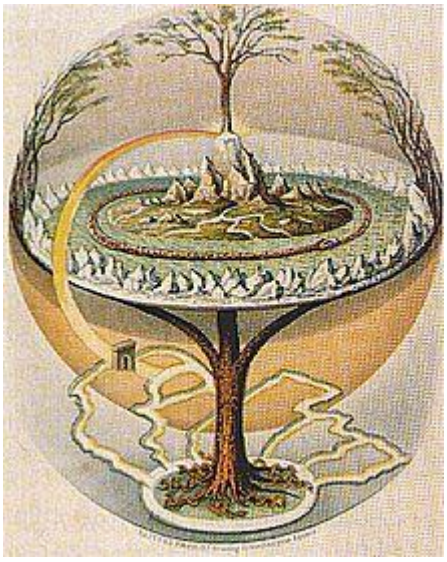
Picture:"What's CO2 Got to Do with It? ", 2012, by Longzhu Shen at Carnegie Mellon University, Pittsburgh, Pennsylvania

The installation at Carnegie Mellon University's Art Park Lab illustrates the fluctuation of carbon dioxide levels in the atmosphere by making use of environmental-friendly lighting. The chemistry graduate student Longzhu Shen and the Research Professor of Chemistry Mark Bier, realized the concept to piece together the LED ropes to create a graph of carbon dioxide aiming at sending a strong alarm message to the world about the unprecedented rise in carbon dioxide levels since the Industrial Revolution.

2.2. The tree of life, the tree of knowledge, the solar trees

The designer has in mind to adopt the abstract form and the whole symbolism included in the term of tree. Starting from the basic definitions she realized the essential significance of the tree of life used also as a synonym for sacred tree, symbolizing the interconnection of cosmos, adopted as a common pattern in many different world theologies, myths, and philosophies.

The tree of knowledge, connecting heaven and the underworld, and the tree of life, connecting all forms of creation, are both configurations of the world or cosmic tree, presented in various religions and philosophies as the same tree.



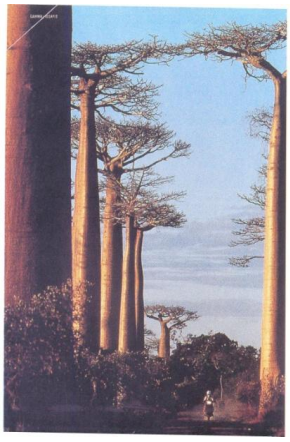
Picture: The holy tree in the Scandinavian mythology, Yggdrasil, by Oluf Olufsen 1847, Bagge

Picture: The Tree of Life, a strong symbol used to represent the process of the creation of the Universe in Kabala, the interpretation guide of the Torah, the Hebrew Bible

Picture: The tree of life, by Patrick Geddes, 1897, Outlook Tower, Edinburgh

Picture: The Menorah tree, as a candle holder used in the Jewish religion during the holiday of Hanukkah

Picture: From left to right: the tree of the Greek Hesperides, the Egyptian Tree of Life; the Buddhist Nagarjuna drinking from the Tree of Life.



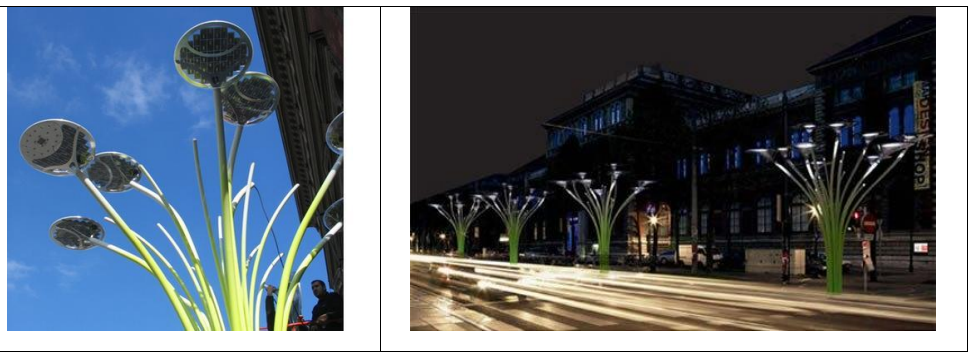
Picture The Baobab tree, used as water storage in Madagascar

Switching from nature to environmental friendly technology, the designer examined the “Baobab trees”, the photovoltaic streetlamps which adopt the shape of baobab in order to harvest and store rainwater for the aquatic plants growing on their “branches”. The solar Baobab being part of an innovative “garden in the street” idea, is offering a vision for the future street compositions strongly influenced by biodiversity.

Picture:Baobab ,Garden in the street , by Julien Maieli and Germain Bourre, 2009.

Picture: Tree solar streetlights, by Nothing design group 2010

A world cultural heritage site in Angkor Wat, Cambodia Korea appointed by UNESCO was equipped with solar powered streetlights in order to be illuminated at night and safe for the visitors and inhabitants. Studio nothing design group and Asian airlines in collaboration with the Korean international cooperation agency (KOICA) have developed and installed the streetlight trees, which lower the CO2 emissions equivalent to planting 86 pine trees.



Picture: "Solar trees", by Ross Lovegrove,2007, on the Ringstrasse ,Vienna,Austria

Designed by Ross Lovegrove, the solar trees have 10 solar panels arrayed at the top of “tree branches”, equipped with built-in batteries, which power LEDs for illumination after being charged. They save energy, are cost effective, emit less light pollution, incorporate light detectors in order to regulate their function and are supposed to replace conventional streetlights all over Europe.

Street lighting consumed 10 percent of all the electricity used in Europe in 2006 and resulted in carbon emissions of 2,900 million ton. In the Austrian city of Graz, with a population of almost 300,000, the use of energy efficient street lighting cost in 2005 524,000 KWh of electricity and 67,200 Euros.

Picture: Sonumbra Solar Tree, by Rachel Wingfield & Mathias Gmachl, 2006, at the Mowbray Park, Sunderland

Sonumbra solar tree is part of an experimental project using fiber-based technologies from photovoltaic panels for providing shade during the day and energy efficient public lighting during the night.

The designers have been experimenting with electro-luminescent for over ten years in order to compose the lace technique Lumilace to create animated textiles.

Picture: Solar Sunflower Field Energizes Austin, Texas, by Harries/Heder,2009

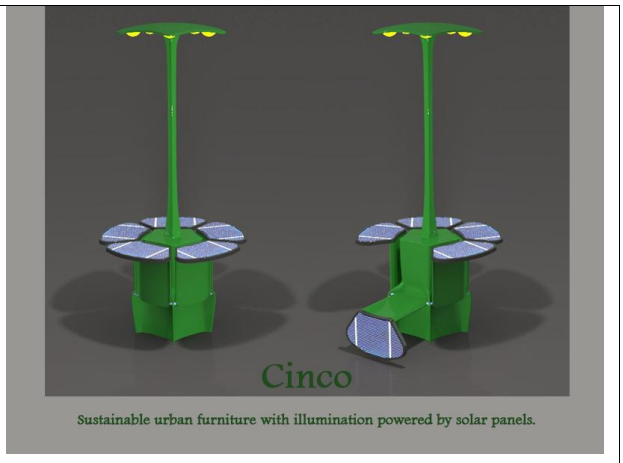
Solar sunflowers absorb solar energy and are providing shade during the day to power the installation's blue LED lights at night. The installation consists of 15 solar photovoltaic panels having the form of sunflowers to visibly declare the energy consciousness of the City of Austin.

Picture: Sunplant by Toshiyuki Kita for Sanyo, 2008, Milan Design Week

The 375cm high unit is a one-off design for Sanyo to be shown during the 2008 Milan Design Week to charge the company's batteries. The concept was created by the studio Kita to promote Sanyo's patented solar cell technology.

Picture: Bodh Gaya Solar Tree by Ross Lovegrove for Artemide ,Milan Design Week 2008

The Green Energy Design was the exhibition of environmental friendly installations for Milan Design Week 2008



Picture: Cinco, Sustainable Urban Furniture,2009, by Helena Bueno, Brazil

Cinco is a comfortable resting place for passersby and an ideal proposal to recharge cell phones, GPS, cameras or note books using solar and wind energy for the LED lamps at the top of the outdoor public sitting object.

2.3 Environmental pollution through plastic, art out of renewable materials.

The solar trees are the initial idea for the environmental friendly campus design profile to be created for the International Hellenic University. The designer, being occupied at an environmental protecting directory, is aware of the great burden plastic waste consists for the planet. Durable and inexpensive plastics being widely used lead to plastic pollution which affects negatively wildlife habitat, lands, rivers, seas, oceans and humans. Being one of the most serious problems the world faces today with severe impact economically and physically on the everyday life, is also often being linked to many human diseases as it is entering and contaminating the food chain by being consumed from fish and various sea species.

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Plastic reduction efforts have occurred in some areas in attempts for people to consider how their behavior can improve nature and what changes need to be done in order to reduce plastic consumption and promote recycling towards a sustainable future. The designer intends to promote the idea of reusing plastic as a second chance raw material and through the design create “waste collectors” for renewable items as by displaying clean recyclable paper, tin, glass, pet, nylon, expanded polystyrene, aluminium and tetra-brick, people are taught to separate them in their everyday routine to ensure that waste starts a second lifecycle.

Plastic pollution in marine ecosystems is a key problem, the Mediterranean Sea being exceptionally endangered because of its enclosed and industrialised coastline.
A study has shown that 66% of 171 Mediterranean seabirds examined had plastic fragments in their stomach because degradation and abrasion reduce plastic to fine particles, which accumulate in body tissue, potentially having severe health effects.

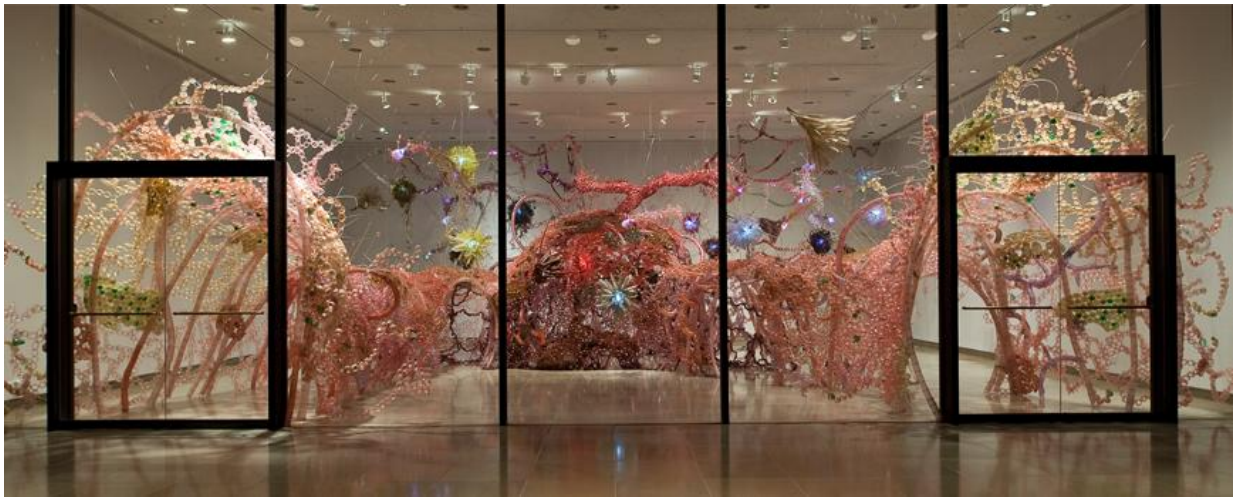
The International Hellenic University offering a Master Course in Sustainable Design is concerned about the impact of human behaviour on the environment and stimulates public discussion about sustainability.

As the architectural design functions as one of the best means to instigate changes in society the outdoor campus concept has to attribute respect to the second chance renewable materials and an innovative approach for taking advantage of their characteristics. In this sense, the architect- designer is urging for action towards the problems of the earth by raising awareness of the environmental issues affecting our planet and provoking a positive first step towards the topics that are compromising the biosphere.

The environmental friendly design scenario is setting out to investigate the second function for the residuum, by challenging students to integrate fantasy and alternative thinking, in a creative interplay with the aesthetically flexible design performance in a public space as the campus.

One of the most active environmental sensitive artists is *Aurora Robson*, her work having deeply impressed the dissertation's development. The "Intercepting the waste stream" workshops and courses offered by her team in the U.S.A. are introducing environmental conscious techniques and methods to modify and metamorphose mainly plastic debris into 3D installations.

Furthermore "Project Vortex" is widely known as an international corporation of artists, designers and architects who are creating artistic and functional items using as raw material plastic remains. By promoting these "sustainable projects" the "Project Vortex" group is supporting non-profit organizations all over the world to organize cleanup activities of coast waters, coasts and waterways.



Picture: The Great Indoors, 2008

One of her most characteristic installations Aurora Robson's is "The Great Indoors" exhibited in Houston, Texas, out of circa 15,000 PET bottles collected from the New York streets. The dimensions of the object are 5m highX12m long and 12m wide.

Picture: on the Left, Sculpture Kamillo ,by Aurora Robson,2011,dimensions 1,2mx1,2x1,4m,out of marine debris materials

On the Right,Sculpture , Synaesthesia, 2011, 0,8m x 0,8m x0,9m , out of plastic debris (PET), aluminum rivets, tinted polycrylic + mica powder, by Aurora Robson,2011.

Picture: Amsterdam's Light Festival, 2013, bridge made from repurposed old bikes

A light installation reusing old bicycles to form a bridge illuminated in vivid colors.

Picture: Sculptural Installation Made From Recycled Plastic Bottles

Large scale fish sculptures , illuminated at night, created out of used plastic bottles at the Rio + 20 UN Conference on Sustainable Development at the Botafogo Beach in Brazil.

Pictures: “Gravity and Grace”, Monumental Works by El Anatsui,2013, Brooklyn Museum, New York

The artist El Anatsui, born in Ghana, reshapes found items into an innovative expression that can be categorized between sculpture, installation and abstract painting, combining aesthetic traditions from Ghana. Over 30 works out of “second chance” metal and wood trash altering debris into site-specific objects have been exposed in 2013 at the Brooklyn Museum in New York.

El Anatsui, captivated by his materials history, is forming the metal wall curtain with bottle caps from a distillery composed to model colorful, textured hangings that take various shapes with each installation.

Picture: Hanging banners by Mary Flynn, 2010,United Kingdom

For two years, four artists cleaned up and collected items on eight coastal landscapes on the Isle of Wight, UK.

The result, the exhibition “Me and you three; 2 years, 4 artists, 8 beaches”, is an eclectic happening by linking the marine environment to human actions. The work communicates experiences of time and decay, contradiction between the natural

beauty of the beach and the evidence of thoughtless way of living and leaving litters behind, thoughts about permanence and ephemerality.

Picture: Trash-Filled Street Furniture, by Design Patagonia,2011

Designer Manu Rapoport of the Argentine studio Design Patagonia created this unique playful Tetris-shaped public art forms within a city park in Córdoba, Argentina.

The design suggestion for the Tetris cubes is to function as seats and tables communicating important data about recycling, imposing to people the environmental message of reusing paper, tin, glass, pet, nylon, expanded polystyrene and aluminum. The encouraging fact is that 30% of the citizens joined the recycling project.

2.4. The public art, the installations, the outdoor sitting proposals.

The next strong influencing factor was the outdoor installations in public spaces whether transferring important environmental messages or focusing on altering landscapes, territory, city, and public art works.

The switching project presented after the environmental friendly solar trees is, because of its treelike form are the “Urban Umbrellas in New York”

Picture: Urban Umbrellas, by Young-Hwan Choi,2010, New York

Sidewalk shed design “Urban Umbrella” by Young-Hwan Choi, who won the first price at the urban shed design contest. The shape, bringing in mind the form of a tree, is constructed out of plywood and designed to protect pedestrians and replace common sidewalk sheds in New York as part of the Re-Construction Art Program.

Picture: Whatami, by Simone Capra, Francesco Colangeli and Claudio Castaldo 2011, Rome

Whatami is an interesting outdoor project using big scale flowers in vivid red nuances, providing light, shadow and sound. They are “planted” in an artificial green field in Rome, which serves as stage for outdoor events or music festivals.

Picture: The interactive sculpture, called “Cloud”, 2012 by Caitlin Brown & Wayne Garrett.

Cloud was made with more than 5.000 new and burnt out light bulbs, and chain pull strings and first exhibited in Calgary of Canada. Visitors walk through the strings, switching the lights on and off. The interaction with the installation is offering the fun illusion that lighting was flashing across the surface of the cloud.

Picture: “Living Light”, Seoul, 2009, by Soo-in Yang and Ruairi Glynn

The outdoor installation is part of Seoul’s City Gallery Project, which aims to insert in Seoul interactive art installations for the public to engage as they pass through.

The permanent outdoor installation doubles as a pavilion and is located within a public park. It can provide the public with text messages to provide up-to-the-minute information about local air quality.

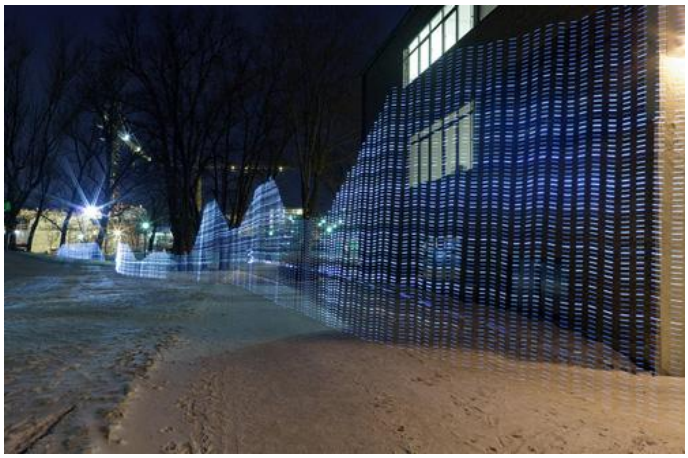
The environmental inspired installation’s façade is presenting a giant map of the 27 Seoul neighbourhoods and every 15 minutes, parts of the map illuminate in neon light

marking the air quality at the specific neighbourhood while special sensors from the Korean Ministry of Environment provide the real time information. The permanent outdoor installation located within a public park is a unique combination of art with technology and provides the passersby useful environmental data through text messages.

Picture: “Urban Folly: Communication Hut” in Gwangju, South Korea,2011, by Herreros Arquitectos

The digitally active concept called *Communication Hut* stands in Korea and is an illuminated public space functioning as a 24-hour Wi-Fi spot and a safe gathering place at night. Standing outside the main entrance of an Asian Cultural Complex, the installation is setting the boundary of the outdoor area, constructed from a light metal frame and shaped like a curved free hand sketched ring above the public space.

The fluid structure elevated from the ground created the “covering” concept statically strengthened by three dark steel poles. The surrounding trees define the exact collocation of Communication Hut through their geometry and position with the ring weaving through at a similar height of the treetops.



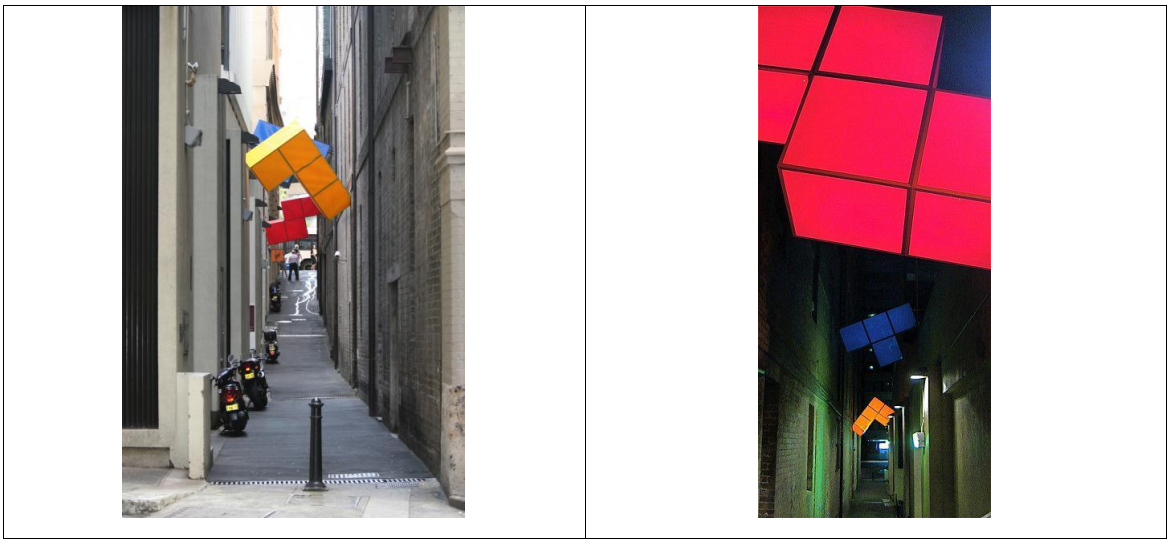
Picture: Immmaterials, Light Painting WiFi,2011,by Timo Arnall, Jorn Knutsen and Einar Sneve Martinussen ,in Norway

The artists used the photographic technique of “light painting”, constructed an outdoor temporary installation which consists of four meters of LED lights responding to Wi-Fi signals in the surrounding space creating images that are demonstrating the various networks and their signs in a spatial representation.

Picture: “Swing Time” by Höweler + Yoon, 2014, Boston

The **g**low-in-the-dark swing set of 20 illuminated swings attached to a steel frame building an interactive outdoor installation.

“We feel that play should not be limited to kids, nor to playgrounds. We had the idea of a playing landscape in the city that engages people of all ages in active play," stated the designer Eric Höweler.



Picture: “One More Go One More Go”, by artists from Gaffa Gallery,2009,Sydney

Larger-than-life illuminated Tetris blocks, were a play- and colourful accentuation for Abercrombie Lane. The installation “One More Go One More Go”, in early 2009 in Sydney saw the classic brick-stacking puzzler through an alternative scale angle.

Picture: “Many Small Cubes”, by Sou Fujimoto, 2014, installation, Paris.

The installation is created out of metal cubes connected on a corner or edge, partly with plants and little trees to form a “Nomadic house”. The design is empty in the centre proposing a "living locus". The architect characterizes the design as an architectural intervention and sculpture at the same time.

2.5 Reflexions on the literature review.

The dissertation proposal was suggesting an “*Emblem of the I.H.U., an outdoor ephemeral design proposal of partly renewable materials for the revival of the I.H.U. Campus. The designer had in mind to construct a covering by using renewable*

materials and items (outside of their intended purpose) suspended over a supporting frame so to create a strong, unexpected visual impression on the inhabitants of Thessaloniki. The Green Installations should offer a strong visual impact to passing by drivers, as well as to the students and visitors of the I.H.U., who may engage with the installation, interpreting the meanings and ideas by a direct interaction with its various elements to construct an individual personal "dialogue" that produces a sui generis experience".

During the first meeting Professor Tsinikas imposed the idea and the direction was set towards a "landmark of I.H.U.".

In the designer's opinion the strongest Landmark- Symbol could only be expressed on a campus through the abstract form of a tree of Knowledge for the International Hellenic University. The concept should be visible day and night, illuminated by environmental friendly solar energy, allowing students to recharge their electronic devices.

"*…The outdoor design will be offering the possibility of sitting together, gathering, attending workshops … ephemeral constructions forming unique sun sheds will be adopted,... through experimenting with different forms and materials. By introducing innovative approaches to design compositions, spring-summer open air workshops are supported, leaving their specific footprint in three-dimensional shapes and transforming the perception of the surrounding free area...*"

The Literature Review is strongly supporting the first thoughts and conversations, offering forms and shapes, inspiration and theoretical background for building a totally unique new concept. Furthermore as it is stated (M.Lindstrom, 2005**)** apart from the traditional consumer behavior approach of satisfying rational and utilitarian requirements it is of substantial importance to focus on users' satisfaction of hedonic motives as the need for play and fun**.**

As Rupert Sheldrake stated: "*Creativity is linking elements together within a new whole which didn't exist before*" ("The art of looking sideways", A.Fletcher2001)

Julian Schnabel (2001) commented about the reuse of items that recycling often certificates the human ingenuity. As a hobby or in order to cover some needs people develop innovative environmental friendly concepts out of plastic bottles, used tires, beer bottle caps, and aluminum cans or left over wires.

Additionally the designer was impressed by the therefore presented landmarks, solar trees, environmental friendly outdoor public art sometimes functioning as sitting or playing apparatus because they are transmitting specific messages as:

- Environmental consciousness expressed in a creative mode. The hangings out of renewable materials have been a significant stimulus for the designer who had in mind to create a “tree” offering also shadow in the surrounding environment and an impressive “ribbon, hanging, curtain”, an “ephemeral wrap” around the stem and branches would be the proper lay out.
- Mostly colourful features inviting people to interact, play, have fun, discover the design scenario or create their own ever changeable model.
- Big scale design inviting to enter and experience their volume. The surrounding buildings A and B have a height of 8,5 m and tree height be about 5m suggesting a transition between built and physical environment. The idea of suggesting more than one tree was more than welcome.
- Day and night features, the illumination supported by environmental friendly energy, theatrical and impressive night pictures in blue or plain white neon light will strengthen the landmark appearance for the passersby.

Chapter 3.Survey-Research and Analysis Phase

The product research and analysis phase is associated with gathering data on the context of use and the potential results that can be included in the design.

Aside from the Literature Review presented in Chapter 2**,** data on existing ideas will be covered in this phase as benchmarking and inspirational information. The morphology research goals of the study were the exploration and analysis of related items. The deliverables from the research are the mood board defining the

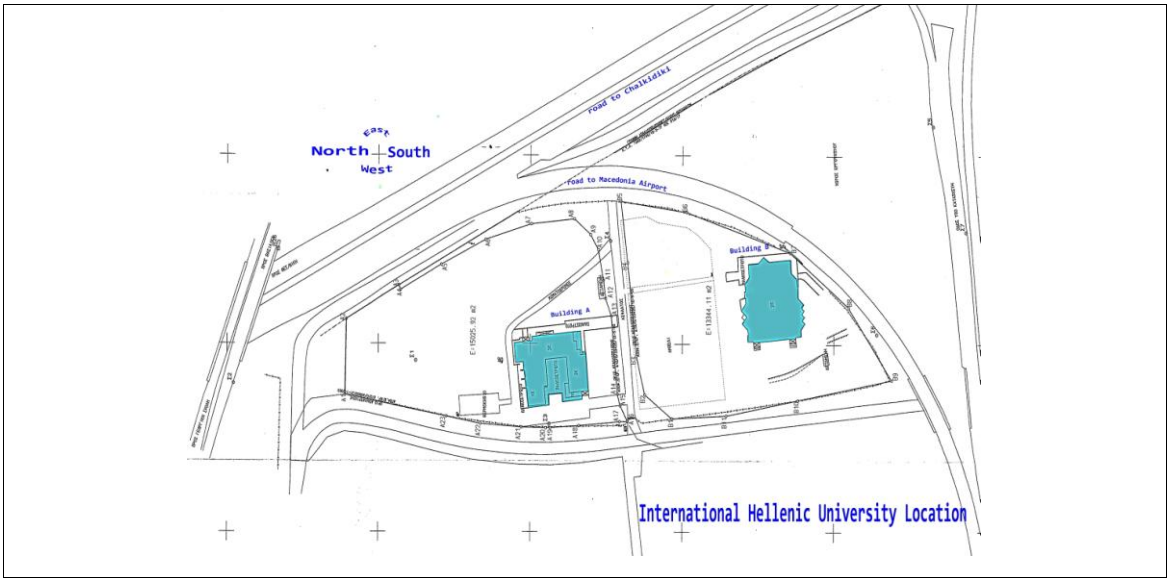
user characteristics. Furthermore a selection of existing concepts is the presented data of the morphology research.

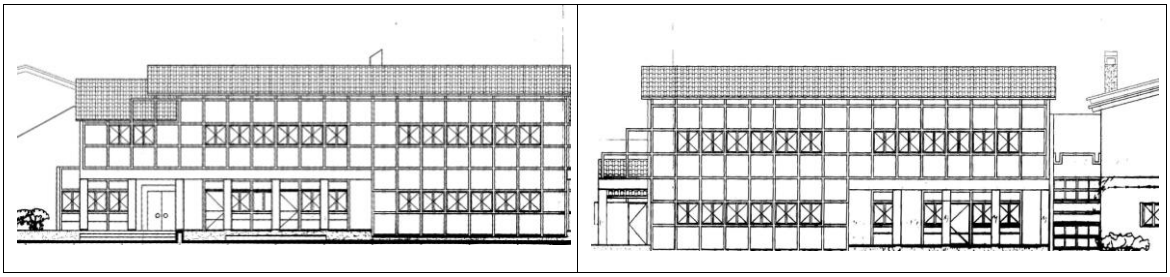
3.1Problem Space Map

The idea and inspiration for the specific dissertation is based on the outcome of a discussion on forming a first design brief based on the international profile of a Hellenic University offering Master Courses addressing people from all over the world and mainly south Eastern Europe and Greece. The development of the concept should respond to the main focus of the study by transforming the initial stimuli into an early concept that can cover the users' needs and offer a preliminary design solution with features that justify the launch of the product development project.

3.1.1 Context: Covered in the Chapter 2 by the Literature Review

3.1.2. The user: International Hellenic University





Picture: The East (left) and the South (right) view of Building A

The International Hellenic University is the first public University offering Master courses in English language since 2005 in Thermi using the premises of the Paseges School. Building B is a “form follows function”(Louis Sullivan,1896) structure without any substantial pattern information although Building A presented in south and east view shows some characteristic rectangular patterns on the facade which have served as a first inspirational reference for the designer.

Furthermore it has been of interest to interview the students, study and refer to the official internet presence of the University in order to clarify the message that has to be transmitted through the design.

The IHU is described as the public Greek University organized according to European Standards, being the missing piece in the educational puzzle of Southeastern Europe and an institution that brings together cultures from all around the world. The main target is academic excellence and cultural exchange in a unique academic environment and the major task and challenge involves the human element trying to motivate and inspire international students from a wide range of countries and backgrounds.

In an international community students with differences in age, occupation, and diversity of the culture are brought together, this multicultural environment of excellent educational level broadening one's thinking horizons, talents and abilities fully developed by the unique chance to experience Greece, a country with impressive landscape, culture, atmosphere and people, not only from the vacation perspective. Demanding and challenging academic curricula, talented and inspiring professors, strong and competitive colleagues in contrast with the relaxing and beautiful surroundings of Thessaloniki offer opportunities to relax, enjoy and engage with the fellow-students.

As instructed in the MSc in Sustainable Development and in the MSc in Energy Systems, apart from detecting the existent condition and future tendency in renewable development and communicating the vital academic framework to understand the essential theory of sustainability and the methods and techniques to profit from practices a unique proposal has to be offered from the Msc in Strategic Product Design in order to express the environmental concern of the International Hellenic University in terms of design.

In the social clubs, students of the MSc in Energy Systems interested in protecting the environment through environmental-friendly activities established the "IHU Environmental Club" focusing on enhancing energy efficiency, recycling and making changes to the university environment. Recycling at the university was also encouraged by the workshops offered by the designer reinventing functions and aesthetic values for renewable materials and creating decorative sculptures for the reception areas of the Buildings A and B.

The campus project will perform as a paramount scenario to promote the I.H.U., one of the few Universities in Greece that can be compared to the best institutions abroad concerning practices and culture. The collegiate atmosphere and the one of the kind learning environment, has to be strengthened and reinforced by the campus scenario as well as the environmental awareness of students and alumni in a pleasant and relaxing mode.

3.2 Data Collection: The extended Internet research

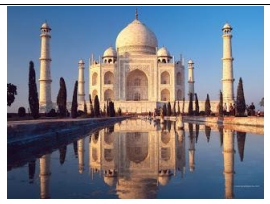
The designer conducted a vast internet research in various domains in order to clarify the concept synopsis for the campus design. The most influential have already been presented meticulously in the Literature Review in Chapter 2. For the design progress though it is essential to be informed about the detailed data collection process.

The domains are:

Landmarks:





Indoor or outdoor art installations or sculptures, handling with the altering of scale factor, as for instance the bigger than human red ball ,the higher than the building pair of shoes, the Clarinet in the palace room or the ice cream on the building. The eye catching altering of scale is often acting as a landmark:




The outdoor sitting public art integrating artistic elements, functional and social components as sitting, meeting, playing at any age and communicating:





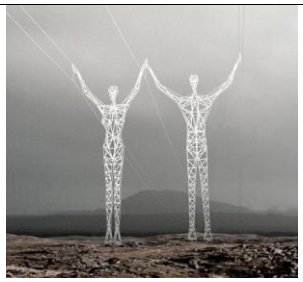



Architectural sculptures, contemporary buildings with fluent almost organic forms, functioning as “cover”, graphic design proposals and cubes in various compositions consist, a precious contribution of the supervising Professor Tsinikas:









All kind of trees from artistic representations to environmental conscious units, their symbolism and the graphical appearance have been analyzed and thoroughly studied and sketched:



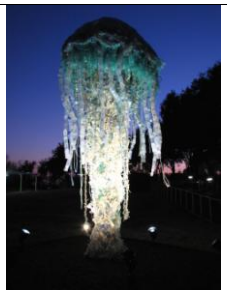





Substantial contributed to the “think depot creating” process the shape of the Cutty Shark, the characteristic colour palette and the cubic architecture elements of the Cycladic islands environmental as well as inspired “trash art” items and the process of modifying residua into functional or simply aesthetically pleasant objects:







3.3 Data Analysis

After having collected, considered and even graphically studied the abundant, proposals in sections as:

Landmarks

Landmarks or special design concepts for Universities

Landmarks, symbols

Outdoor public art for sitting, gathering, communicating

Environmental friendly functional design ideas

Environmental alerting people through functional artistic procedures

Outdoor installations using renewable materials,

myriads of ideas were produced, each rendered in a vast number of transformations and modifications faced with issues to arrive to alternative solutions comprising elements, parts and details from the areas mentioned above. Furthermore, the question was posed: “What meaning should my proposal convey to gratify all the stakeholders and make them more content?”

In the designer’s opinion the concept should transform the continuous and demanding daily agenda at the I.H.U. into an Event. Something different, aesthetically pleasant and unexpected should be suggested, to stimulate creativity by adding simultaneously authentic emotional and symbolic value to the University acting as a means of raising I.H.U.’s profile and enhancing its visibility among potential candidates.

Surveys show that people have paradoxical expectations of the products and objects that make up their daily lives. They like to be surprised and enchanted when they disclose a secret about a new colourful, original, pure and positive thinking new world. Figuring out messages and ideas instead of elements and details searching for radical modifications, instead of satisfying existing needs require a mind-set of “Thinking sideways”. As psychotherapists have recognized, our love for special brands often constitutes a replacement for difficult emotional relationships. So the designer will try to suggest a radical new meaning and language through her campus proposal, by comprehending the subtle and unspoken dynamics of the stakeholders, in the ambitious working and studying environment of I.H.U.

3.4 Final Brief: The I.H.U. campus, a concept, a story

The philosophy is to focus not only on the design proposals but the University’s philosophy, the unique qualities of the first English speaking international oriented Master courses, while accentuating its Hellenic characteristics. The name of the campus design should convey the special traits and the importance of I.H.U .for the lives and careers of young (of any age) people from all over the world.

3.4.1 Mood board

The *moodboard* that is illustrated is a visual depiction of the use context and includes all the factors that impact the relationship, perceptions and emotions of the user.

The dissertation's project is designed primarily having in mind the following mood board for certain user groups, as the I.H.U. students, alumni, visitors, friends, professors, administrative stuff ,studying, working or teaching in the first and unique English speaking Greek, public University and sending out to the world the message of international entity through education and knowledge.

As the majority of the users are already professionals working hard during the week they are enjoying their Master studies, during the weekends, appreciating the refreshing feeling of being students again, and challenged to restart for a better chance in life and career opportunities. A new meaning through design should distinguish I.H.U. of all existing Universities and tighten the bonds between the stakeholders.

The articulated message could be: "We are students at the International Hellenic University, enjoying the international learning environment, we are committed to do our best to succeed and we care about our future, the fellow students, the world ,the planet we live in. Apart from the stringent curriculums we have the right to relax and have fun also during our studies; we want the relationship among us to be strengthened and an effective alumni network to be anytime available for social and professional support.

Foreign fellow students from south-eastern Europe and all over the world, you are welcome and encouraged to visit Greece for Master studies and we ensure you that you are always coming back as alumni because of the affective human relations and emotional connections built among us in Greece!"

The main target group addressed is students between 25-45 years of age, attending Msc's at the I.H.U. They are

- Of Greek nationality having in mind to forward their carrier in Europe
- Erasmus students
- International students from all over the world

- International and Greek alumni/alumnae

3.4.2 Guidelines

The *Design guidelines* depict in detail all the parameters, characteristics, functional requirements and limitations in a design project. They have a direct impact on the design strategy and are of great importance when selecting the design solutions during the concept generation and evaluation phases (Fotiadis, 2013).

Design guidelines depict the desired relation between the user and the product. In every design iteration of the concept, the guidelines direct the concept selection and validate the chosen solution.

They are created based on the data findings of the literature review and the research and analysis phase and decomposed the problem into sub solutions.

The guidelines are the requirements set after balanced collaboration of the designer with the Consulting Professor N.Tsinikas:

1. Aesthetic and symbolic references to a tree multipurpose structure

2. Visibility from the road, height <=5m

3. Environmental message, save the planet, eco-friendly,

reusing waste material, solar energy powered illumination at night

- The stem, the branches, the cubes can be separately or all together illuminated
- Cell phones, tablets, laptops can be recharged with solar energy

4. Stable skeleton of the vertical (stem) and horizontal parts (branches),

- Cubic modules 40x40x40,or 25x25x25, cubic shapes
- easy to take off and rearrange,
- use as frames for artistic intervention, an outdoor aesthetically pleasing sitting installation
- different material for the cubes depending on their functional requirements, Eco friendly, reusable, translucent renewable resin material for the stem and the branches supported by an internal stainless steel structure

5. Golden ratio calculated dimensions
6. The startup dimension is 40cm, as the height of a common stool
7. Users can seat or lay around the stem
8. Users will interact with the surfaces of the cubes and change the appearance of the cubic modules
9. Interchangeable form so that users can create surfaces out of renewable materials and wrap them around the stem for shading
10. The vertical and the horizontal elements (stem and branches) are fixed
11. The cubes can be removed in the winter
12. The tree appearance will be modified according to the season change.

As an idea in the winter the stem and the branches will be decorated for Christmas, in spring the bloom of nature will be designed through found objects, in summer hangings, curtains, ribbons will perform as sails and in autumn during workshops or

seminars by using renewable materials and plastic debris, new compositions will be designed consistent with the philosophy of creating art from everyday second chance materials.

13.Colorful shapes clearly bringing in mind Greece, joyful, vivid nuances translucent in white, green, deep and light blue of the cubes bringing in mind the sea, the sky, the architecture on the Aegean islands.

14. Playful features as a contradiction to the demanding modules of the Master studies, almost an interactive adult toy for stress relief.

15. Cost is not a consideration for the scope of this dissertation.

Chapter 4. Realisation Phase

4.1 Ideation/Design Intention/ Design Brief /Partial Solutions /Concepts:

Picture: The first sketch of an I.H.U. tree, indicating the solar panels at the top, and a free artistic form, trying to articulate a slogan for the campus and commenting the research results.

The design intention is to influence the user's psychological state and promote artistic interaction, associating the object with emotions, images, experiences in order to set it apart from its competitors.

Unexpected meanings are to be given to the concept by taking into account that the proposals have to improve the student's life during the studies within the whole psychological, cultural and social background.

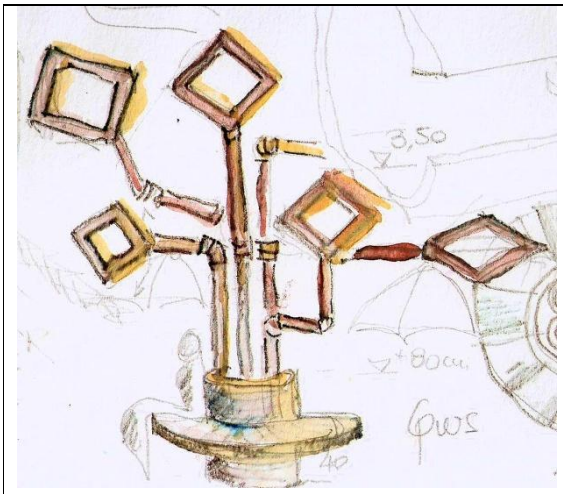
The most suitable ideas and sub solutions were combined into concepts in the phase of concept creation and visualisation. The primary goal was to capture the form and function of the elements of the design as well as their aesthetical appeal.

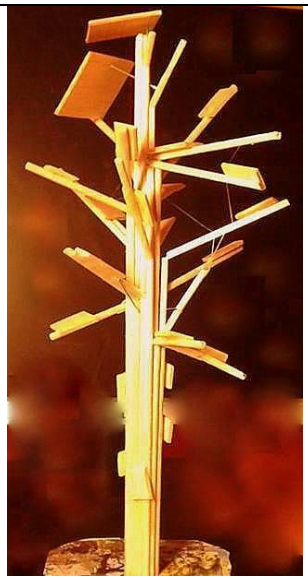
By using handmade sketches, aquarelle drawings, Sketchbook and Solidworks CAD models at the beginning and later Rhino CAD models, assemblies of possible outcomes were visualised. Rough geometric layouts and aquarelle pictures were created to represent each of the components and determine the dimensional relationships between the elements.

Three concept directions prevailed in the designer's preference:

A. *The tube form concept* with adjustable "branches", acting as frames where during the workshops plastic debris will be reformed as surfaces or hangings in order to offer

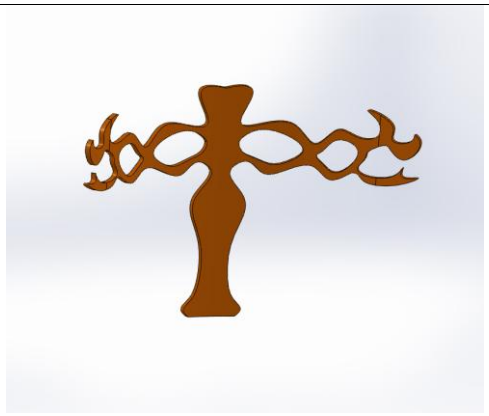
shading and the unique artistic appearance, easy to rearrange for spring, summer, or Christmas events.





B. *The Menorah tree*, the free form concept:

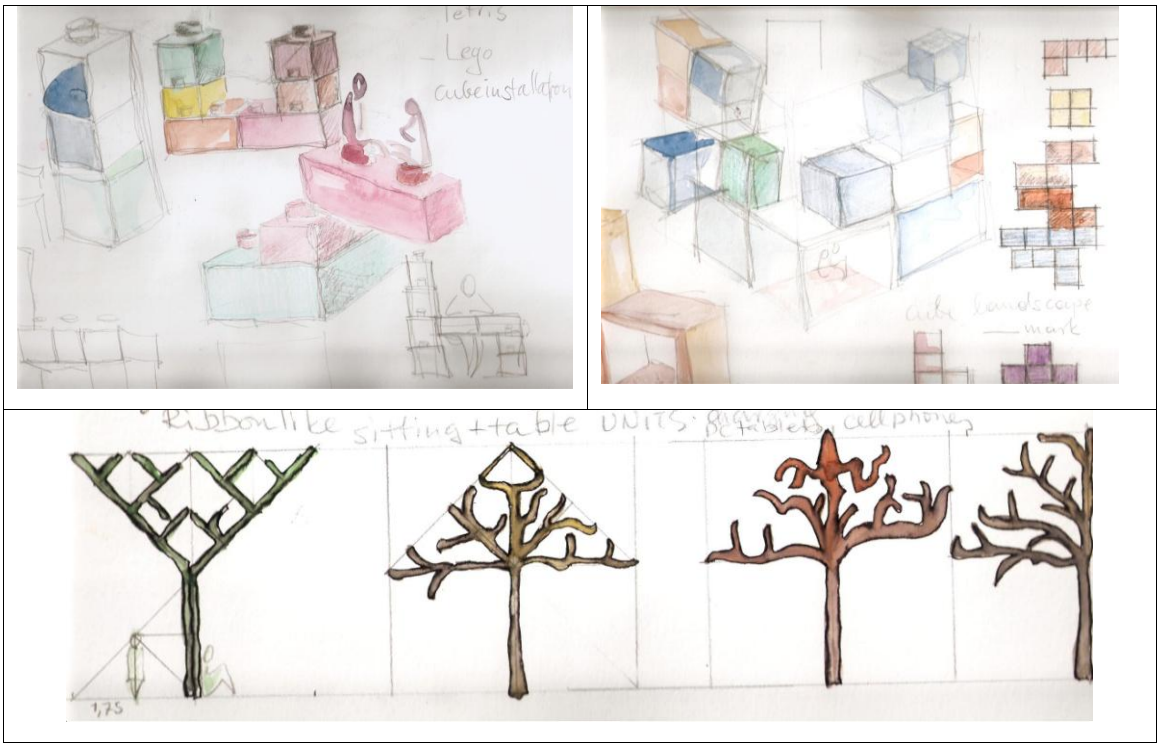
Having in mind the menorah tree, the holy tree in Judaism and interesting organic forms from Pr.Tsinikas' published rich research index, the author articulated through sketches various shape proposals:



Picture: The Menorah tree, the free form concept in Solid works

Picture: The Menorah tree, the free form concept hand sketched

C. The architect is experimenting with various structure principles as *the Triangle*, *the Tetris* and *the Lego* modules the vertical functional forms found around, as D.E.I. (the Greek electricity provider) electrical current pylons and the cubic solids.



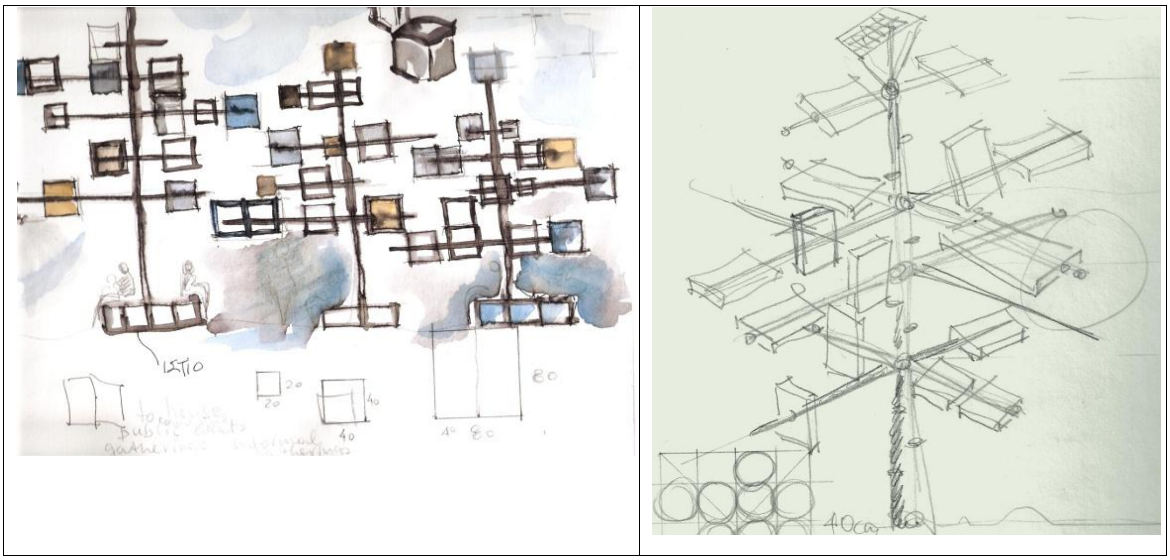
Picture: The Triangle, the Tetris and the Lego concept

In concept generation phase, all the possible solutions that can satisfy the design guidelines were examined. Professor Tsinikas was consulted on many sub problems and offered directions for further development.

The data from the external search were combined with ideas that emerged from brainstorming sessions. A significant number of creative meetings between Professor Tsinikas and the designer were the backbone of the ideation process.

The generated ideas and solution concepts were either described in words or illustrated in sketches in a non-linear, iterative process.

The cubes concept started to evolve from initial, rough sketches:

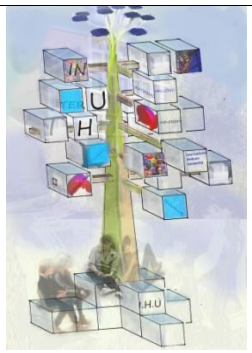


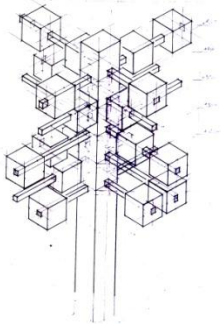
Picture: The cubic shape concept

Intending to invent a fresh vision for the icon of the International Hellenic University it will be attempted to show to the users how to experience the time at I.H.U. through a new prism. The outdoor campus proposal should convey latent notifications of an emotional concept: The disciplinarian, effortful time schedule of the MSc programmes, addressing mainly Business Administrational and Financial courses experiences the contradiction of a playful, colourful and joyful campus design.

The adult students will take advantage of the free time concept to relax and feel like pupils or scholars again.

Thoughts were roughly sketched; colours and assemblies were shaping the sub solutions:

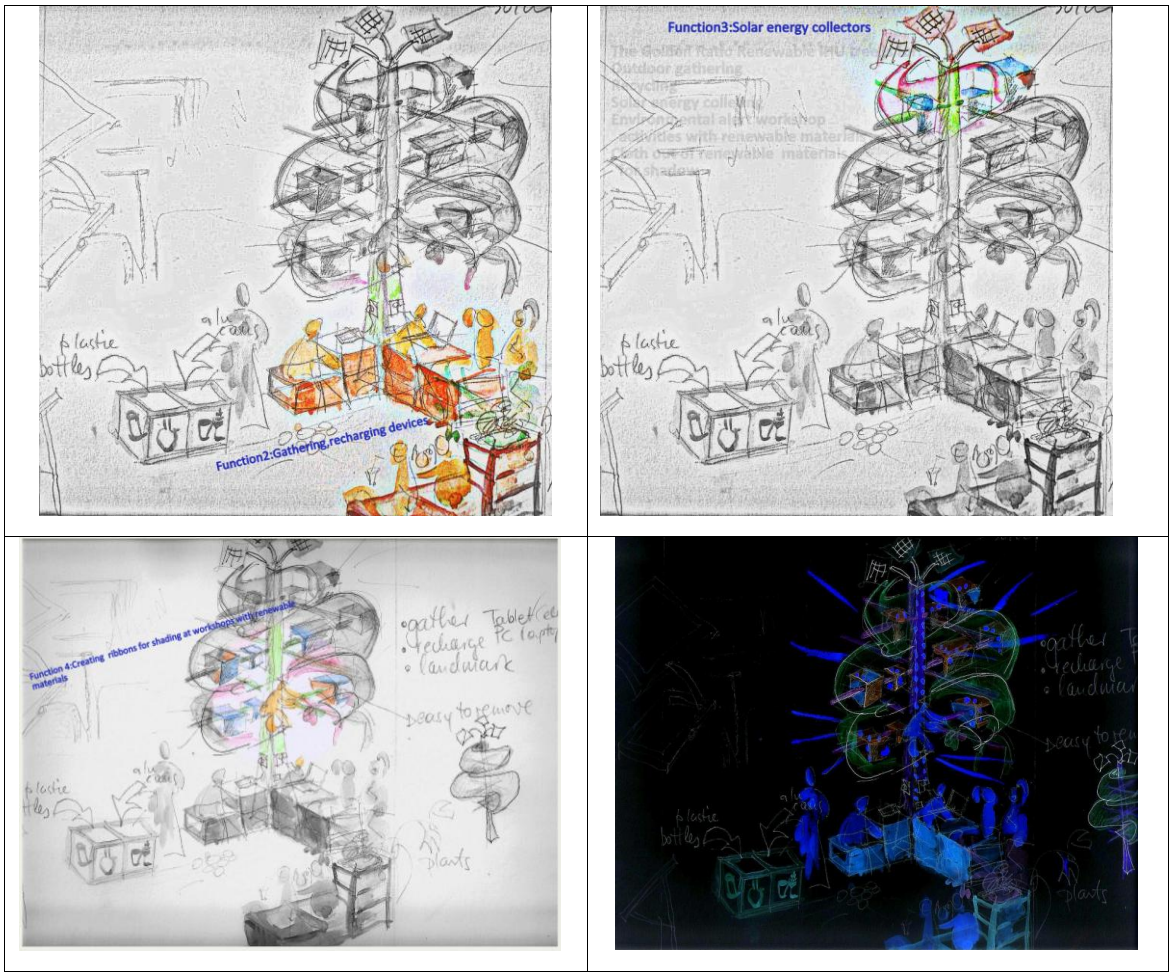




Picture: The cubic concept in Solid works models and hand sketches

After consulting the supervising professor N.Tsinikas it was decided that the prevailing concept would evolve the cube form and the final concept specifications were evolved, developed and interpreted.

Snapshots, wireframes, and sketches were used to describe the selected sub solutions of the concept. The morphological elements of the design are also explained and the deliverables include all the relevant details and functional characteristics of the concept.



Picture: Hand sketches depicting the various functions of the concept

The sketches above are defining the main “functions” that can be completed under the campus tree, according to the guidelines: Collecting renewable materials, sitting, and gathering, communicating, at the same time collecting solar energy and recharging the electronic devices, and creating a hanging to wrap around the stem for shading during environmental alerting artistic workshops. The campus tree is illuminated at night powered from the solar energy supporting the landmark feature for the I.H.U. outdoor concept of the designer.

The final design brief acting as a simple and straightforward guide during the product development process is aiding to define a more coherent definition of the project goals and setting the framework of the assumptions for the development process (Ulrich and Eppinger 2012).

Design Brief:

An outdoor installation unit for the campus of the International Hellenic University

Product description:

Outdoor functional installation using environmental friendly energy and materials

Project goals

- Landmark of the University
- Sitting, outdoor gathering place
- Collecting and using solar energy to be illuminated at night and offer the possibility for recharging electronically equipment as cell phones, tablets or laptops
- Advertisement possibilities through text messages on the cubes are to be explored
- Outdoor activities node

  (Renewable material workshops, seminars, design for environmental alert)

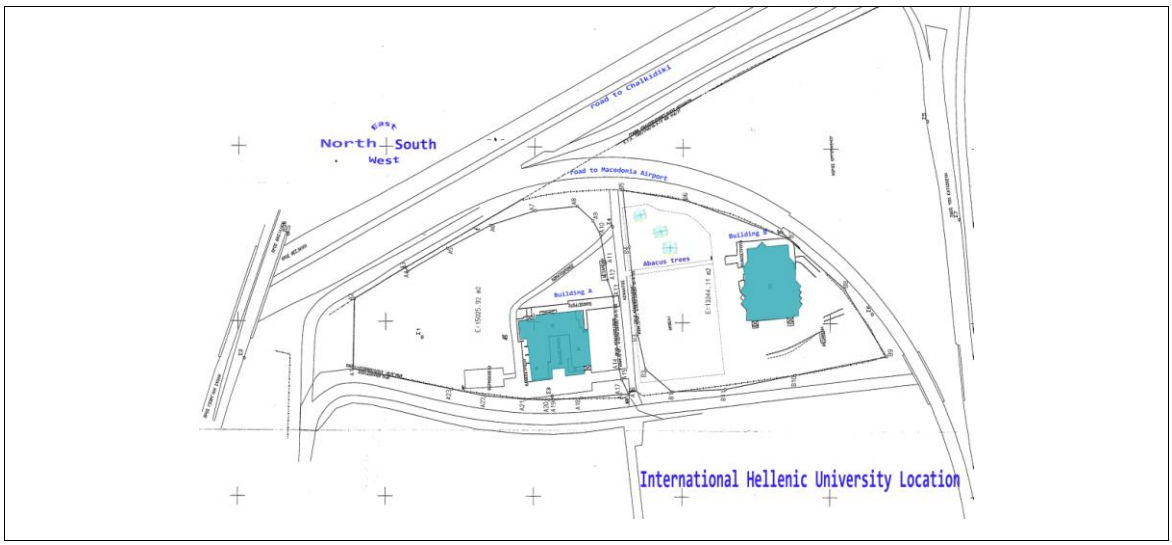
Assumptions and Constraints

- Easy recognizable from the driving by people on the roads to the airport and Chalkidiki
- Day and night features
- The morphological elements serve various functions as sittings units, tables, frames for environmental seminar activities

Stakeholders

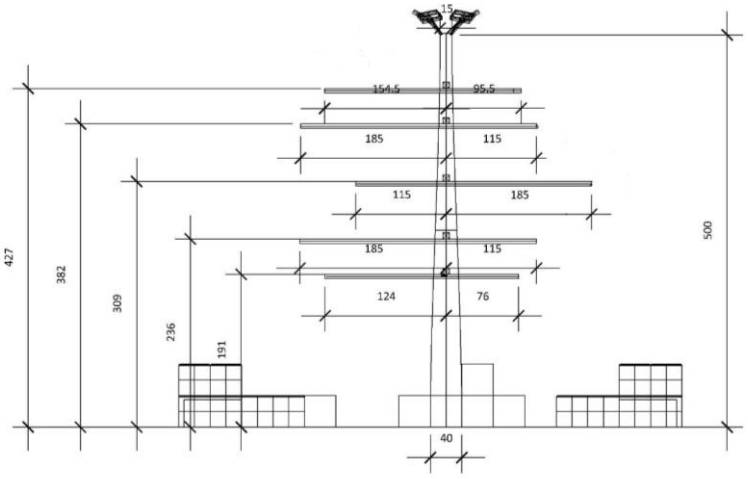
- The people driving to the international airport and Chalkidiki
- The students, alumni and visitors of the premises of the I.H.U.
- The International Hellenic University's professors, administrative stuff, guest professors etc.
- Outdoor installation's artists to perform artistic outdoor activities/happenings
- The Strategic product design students to interact with the I.H.U. tree during special design courses.

4.2 The Final Concept: The Abacus tree for the International Hellenic University



Picture: The International Hellenic University's location with indicative locus for the campus tree.

The shape of the concept shows abstract similarities, apart from the tree form and the Building A rectangular patterns on the facades, to the first calculating aid from the ancient years, called Abacus (Αβαξ) .The abacus is a tool that was in use centuries before the adoption of the written modern numeral system, an ancient counting frame a simple and functional calculating table.The earliest archaeological evidence for the use of the Greek abacus dates to the 5th century BC, which was a basis of wood or marble, with small counters in wood or metal for mathematical calculations. So the name of the proposal will be Abacus as homage to the School of Economics and Business Administration of the International Hellenic University, to which belongs the Master program of Strategic Product Design.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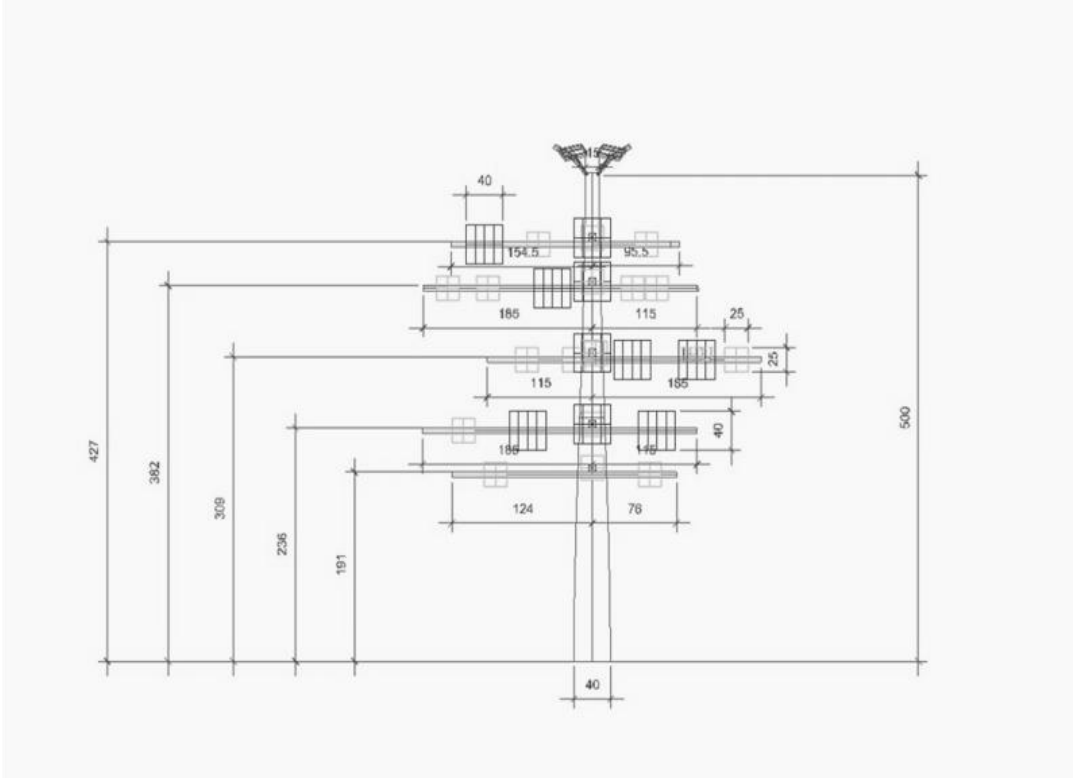
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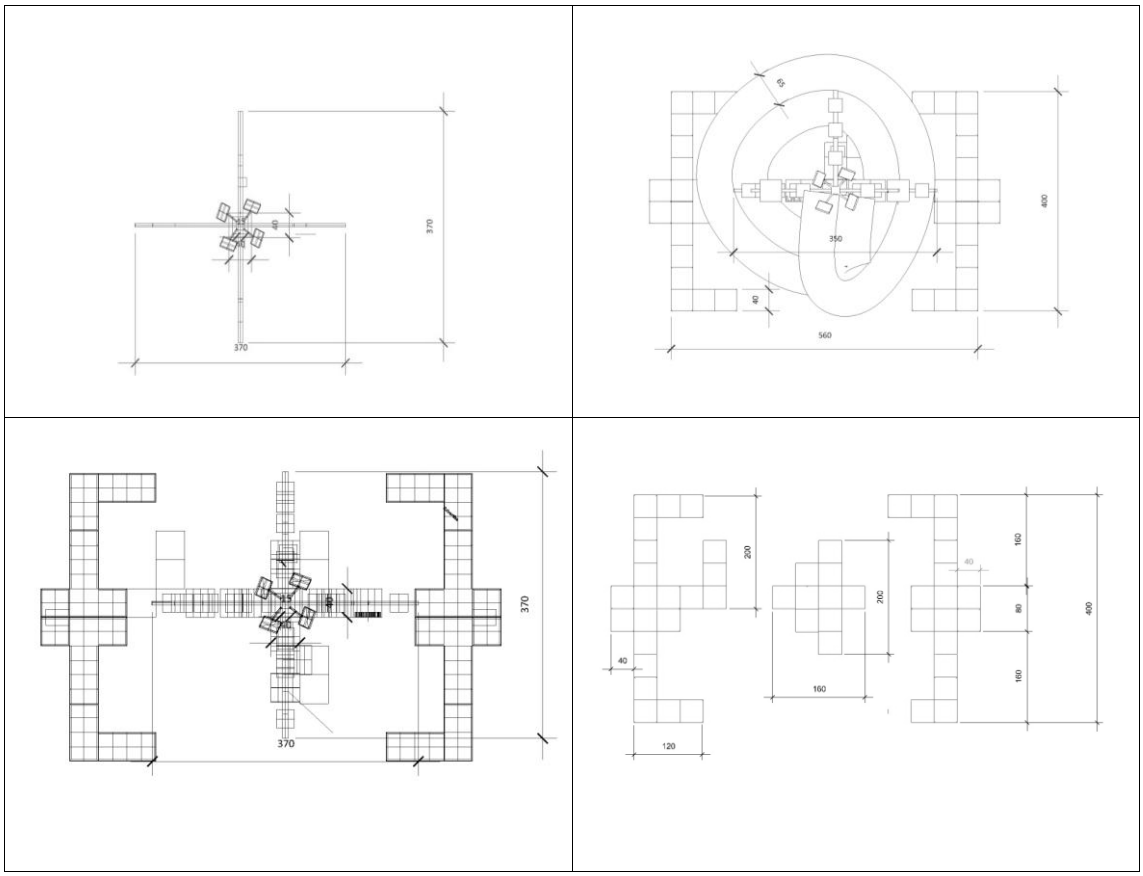
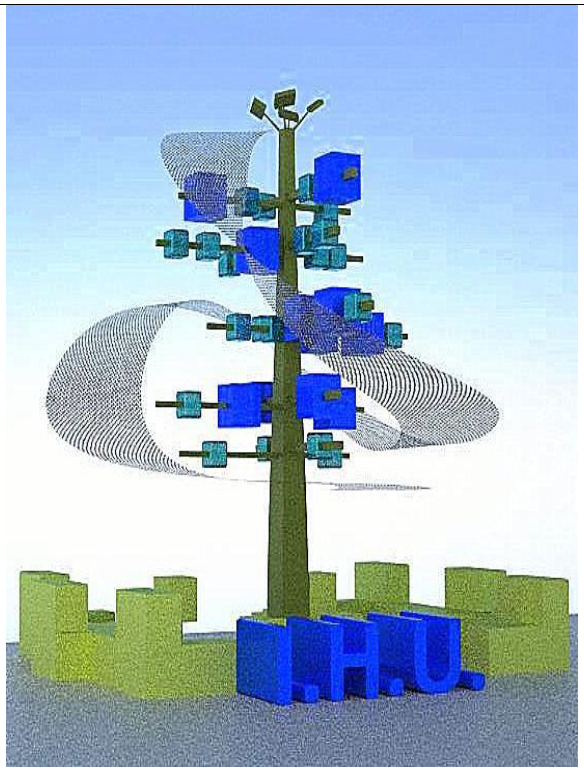
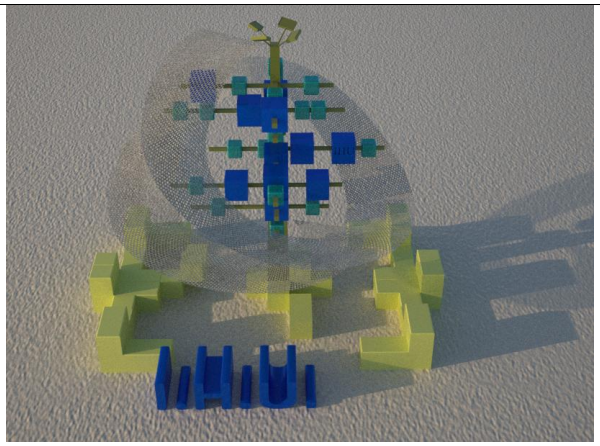


Picture: 2D CAD drawings depicting the stem and the branches in golden ratio calculated dimensions (previous page upper first drawing), the front view with cubes and dimensions (previous page second drawing), top views with dimensions and various sitting ideas in this page.

The main requirement which had to be satisfied was a thematic unit with individual characteristics that contrasts with the rest of the built environment by establishing a strong shape deposit.





Picture: The Abacus tree

The main Abacus tree consists of a steel skeleton tree with a stem of 500cm height and 10 horizontal branches of lengths as following:

2 pieces of 250cm

2pieces of 200cm and

6 pieces of 300cm,

fastened at heights calculated according to the Golden Ratio .

The cubes are positioned on the branches at Golden Ration adjusted dimensions.

In the concept are presented:

22 cubes 25X25X25cm and

12 cubes 40X40X40cm.

Around the stem are indicatively placed 50 cubes40X40X40cm in total to form a sitting-gathering unit.

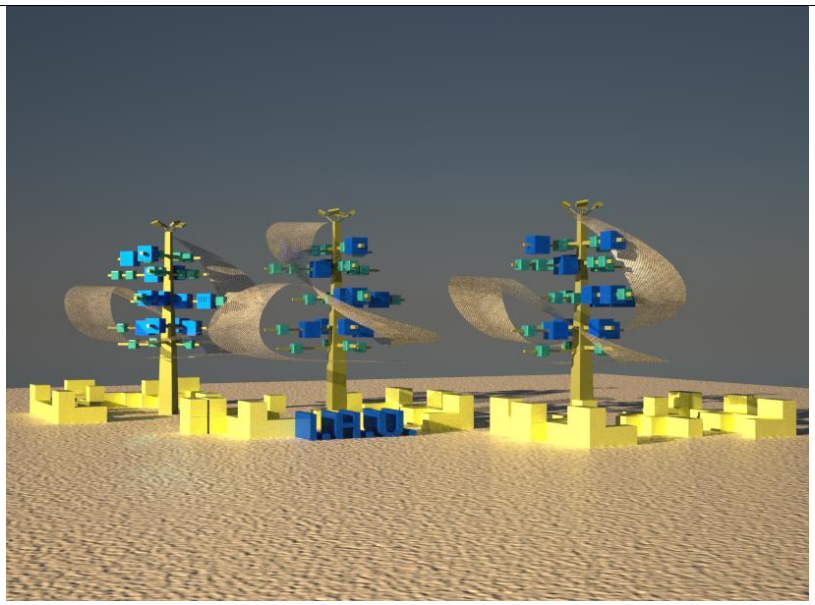
20 cubes of them are made out of Styrofoam, comfortable for sitting around to form a gathering locus mainly having in mind the Tetris arrangement standards. They are covered with waterproof fabric of renewable materials and can easily be rearranged or stocked in the basement of Building B during winter.

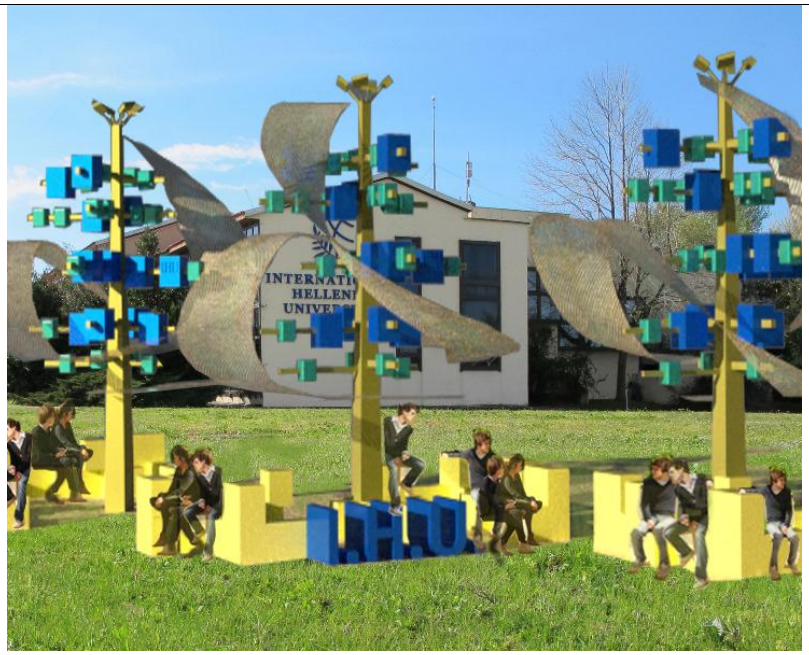
15 of the cubes are made from sheets of anodised aluminium and will serve as frames for the students to create their renewable sculptures around them, 5 function as tree-pots for vegetation, introducing greenery into the design, and the last 10 serve as recycling boxes for collected recycled materials as aluminum, plastic bottles, and paper cups.

Each cube is created as a single entity, completing various tasks while others transmit an organic sense of randomness.

The usage of salvaged materials during particular workshops is as encouraged as challenging in order to make something useful out of something that seems unnecessary at first glance, like a plastic bag that can easily be fused and reused to build the shading ribbon of the Abacus tree. In the designer's opinion the attitude of play and interaction brings out creativity, materials and textures are reinvented in a surprising, emotional manner that is presented as a key part of the structure, and spontaneous arrangements should be made possible. Emotional synergies are to be created, seducing the users to experience feelings of nostalgic "warmth around the heart", of being a scholar again of "playing around" during the breaks in the Abacus "playscape"(play + landscape).

Furthermore Abacus is designed as a unit which can be reproduced in various heights to create a little forest as shown in the picture below.





Picture: A small Abacus forest

In order to build the brand's personality, namely giving the campus design special values and feelings to distinguish it from the rest, the brand platform has to be expanded to appeal to as many senses as possible. Sight, the most seductive sense of all often overrules the other senses, and has the power to persuade people against all logic. As examined in the literature review, the tree is a form appropriate to generate nostalgia of "the innocent time at the school yard, close to nature".

The materials induce the impression of an abstract sculpture, a decorative and concurrently functional outdoor sitting installation on the campus of a

contemporaneous, high rated University in Greece addressing students from all over the world.

An unseen steel structure functions statically as a frame or skeleton supporting panels, surfaces and sheets of renewable resin for the stem ,the branches and the cubes. The installation will be supported statically by inserting rods from the stem into concrete pillars under the ground.Four solar panels arrayed at the top of the stem charge built-in batteries, which power LEDs for illumination. The installation comprises solar-powered LED ropes that glow a brilliant white blue at nighttime and the stem, the branches and the cubes also have light detectors incorporated in order for the lights to automatically turn on at sunset and off at sunrise.

The colours used for Abacus should forward the Hellenic personality of the International University, by promoting the unique values of Greece the light, the sun, the sky, the sea. The designer recommends blue of the Aegean Sky, emerald green of the sea, the olive leaves and the wine yards, plain white, and okra yellow.

The cubic shape abstractly resembles the solid cubic architecture on the Greek Cycladic islands, while the fluid form of the renewable hanging is bringing in mind the plasticity of the contemporaneous buildings, as presented in the research phase.

The language used is almost introducing a friend. “How can we make a person feel better when he/she has an interval after a demanding course at the I.H.U. very often after exhausting days at work, as the majority of the master courses are addressing professionals?”(Paraphrasing Artemide, the manufacturer of lighting fixtures) and the value proposition (=how it makes you feel) of the Abacus outdoor design is: “When using, playing with, and sitting under this particular installation you automatically get mentally transferred to:

1. The credulity of the childhood psychology: Becoming positive, relaxed, influenced by the openhearted mentality of the school days, feeling like a child, playing around, taking advantage of the variations offered by Abacus because relaxation is essential for the improvement of the mental wellness and ingenuity.

2. Vacation in Greece mood: Making a present to yourself by revering into the colors of the Greek summer, every time you stay at, attend a workshop, design seminar or simply are looking at the Abacus tree.

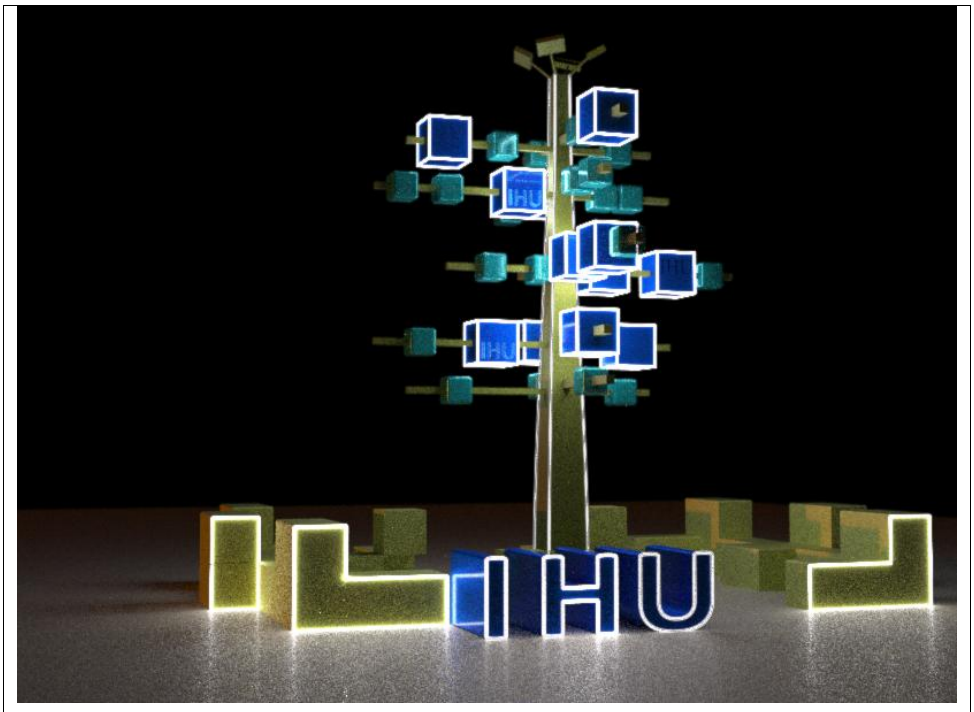
The way of living is based on the prism through which we experience every day. Preferring the joyful, optimistic, and colorful prism, looking at the same old things as if new through the eyes of a child, is a suggestion to accept and acknowledge the importance of the relaxation time and its impact on the body and mind wellbeing.

As graphically presented in various renders and sketches the Abacus tree is proposed as an “arrangement modulus”. Oversized letters composing chosen texts can be constructed in front of the stem and the sitting composition. Indicatively the name of the University is shown, but the text can even advertise some of the consulting companies.

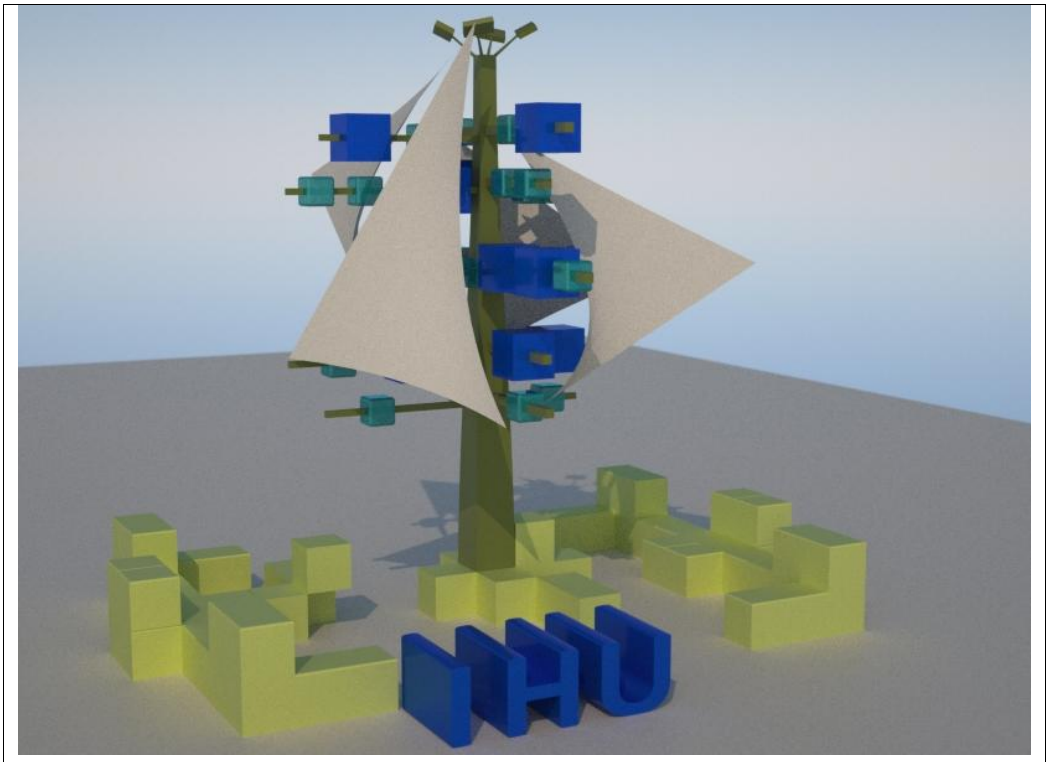
Picture: Text advertisement can be recognisable from the main roads or from the aeroplanes

The design scenario proposes possibility for the colours of the stem, the branches the cubic assemblies, and even the height to be modified according to the ephemeral

design plan and a joyful Abacus forest can be created, illuminated during the night and functioning as a playscape for adults.



Furthermore the Abacus tree is changing features as the trees during season change, offering possibilities to be reshaped as a Christmas tree, without cubic solids and hanging during the winter or hangings functioning as sails during summer:



4.3 The Final Concept Evaluation

In the last phase of the design process, the concept evaluation examines to what extend the concept meets the design requirements, performed by the designer, based on whether the characteristics satisfy the constraints and guidelines as described. The design intention was to create the campus metamorphosis at various scales and degrees punctuated by large “Abacus trees” providing light, shadow and free sustainable energy. Furthermore Abacus is created to play a significant role as a landmark for the International Hellenic University. Another substantial parameter set by the consumer behavior curriculum focuses on satisfying apart from rational and utilitarian needs, hedonic motives as the need for play, fun and relaxation.

The concept constitutes a pioneer proposal, setting up orientation paths for an innovative approach to outdoor design defining the product’s identity, and the differentiating factors. During the next phase multidisciplinary teams are to include

utilitarian and functional features but the final product will remain faithful to the conceptional milestones set by this project.

According to the Concept development process after the concept generation phase that has been created during the “Abacus tree for I.H.U.” dissertation, a detailed economic analysis has to be performed, the precise production methods elaborated and selected, test models and prototypes built and evaluated before the product design cycle is accomplished.

The designer presents her ephemeral campus concept, which can be also proposing to people a new vision of their life context by re-imagining their potential to create an experiential environment, forging an informal relationship with non-artists and asking students to reconsider Abacus in an alternative context.

Abacus functions as an icon of hope and optimism, a whole that is greater than the sum of its many parts, relies on the universal language of environmental imagery – despite language barriers, cultural differences, and geographic distance.

Chapter 5:Conclusion

With Abacus the attitude of fun brings out pure creativity in a relaxed way, the students become playful, return mentally to the time of innocence and credulity of the childhood. The proposal creates a brand that addresses directly the consumer's emotional values, attention and desires and generates an emotional reaction, by stepping back from user, taking a broader perspective and giving unexpected meanings to the design. The proposal embodies notions of identity, socially recognized and thus is designed to become a token in the symbolic exchange of meaning. The designer intends to use a fresh vocabulary through emotional design, transmit emotions and offer affective dimensions and stimulate the students to edit their own, personal story, webbed by a network of pleasant memories of their childhood in their brain. Through rounding off cheerful reflections about school yard's playtime, pleasant mood is evoked; by stimulating the stakeholders' imagination the bond between user and product is essentially strengthened and a strong tie relationship is thought as interactions are frequent and important to the individual.

The I.H.U. alumni will be encouraged to plan there their meetings for common interactive gatherings by the I.H.U.landmark, for instance: "Reunion after two years under the Abacus. See you at the Abacus".

The Abacus project didn't mold on the needs and wants of the stakeholders, on the contrary it is challenging dominant values and habits by conveying a strong message of life modification redefining the motivation for realizing: People will adore "Abacus" because it makes them feel better!

The designer, a mature I.H.U. student enjoying an executive Master course at the University, a hard working person during the week immersed herself into the unexplored areas of psychology, absorbed the unexpressed needs for the therapeutic time between the claiming and pressing core and elective modules of the University, interpreting and transmitting the colors, the forms and the essence of Greece into the competitive advantage of the "Abacus" concept, setting an alternative direction in design, igniting the new role of outdoor proposals:

In the night, glowing curves and the flowing illuminated ribbon instantly identify Abacus as one of the world's avant-garde of innovative experimental design.

Abacus seems to hover over the campus as a sculpture of light, like an illuminated pharos of knowledge strongly supporting the Greek international identity of the University.

Abacus will be the protagonist in reshaping and redefining the I.H.U's cultural persona worldwide: Its appearance is not static but produces a sequence of curving forms the result is a seemingly floating structure.

The architect-designer seeks to create a place of pause and potential interaction both an object and an atmosphere an interactive and sustainable concept using colour, solar energy and light to form a geometric pattern of multiple hues a place that people will experience in multiple ways. The playful effect enlivens the atmosphere of the campus and embraces a sense of fun for the users by engaging their attention and imagination.

"Abacus" as a balancing and relaxing proposal acts as an additional international student attraction factor, as by forwarding the free time /summer camp management variants, the pleasant vacation memories in Greece are brought in mind or the plans are made for next year's vacation.

If branding is a theatre the consumer has many roles to choose by and making it a part of his/hers student life. The designer, as a director is synthesizing synergies, seducing the users to invent new meanings and state: "Within the context I fully believe the story:

Create, interact, enjoy, it's Abacus, the campus toy"

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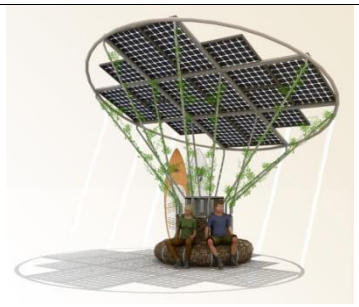
Chapter 7. Appendix A: The data collection

In this Appendix data is presented, which has influenced partly the product development process. The most important influences have already been presented in the Literature Review and in the first data collection phase but the designer has to mention also the combination of a conventional outdoor bench with the part of nature wooden sculpture the fluent lines of the sitting proposal the attractive cubic assembly in fascinating blue and white nuances and the treelike streetlights used as swings from the people.

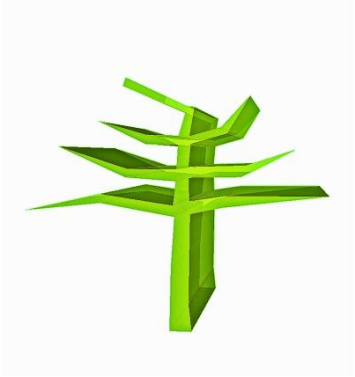
Furthermore the illuminated cubic installation and the red metal frames offered inspirational aid during the Research and Analysis phase.

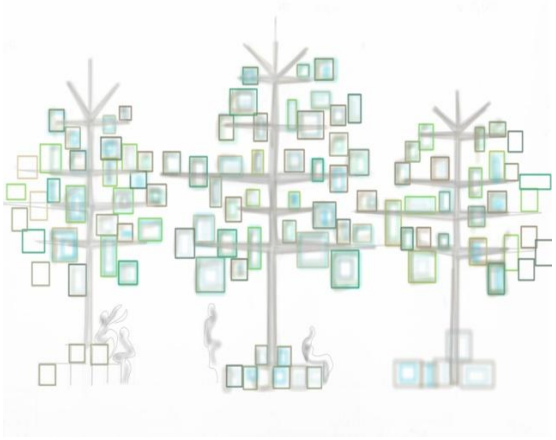


Chapter 7. Appendix B: The concepts: Photos-Renders-Sketches

An extended sketch and render presentation is displayed, starting from the “first sketches commenting data collection and the research results”.

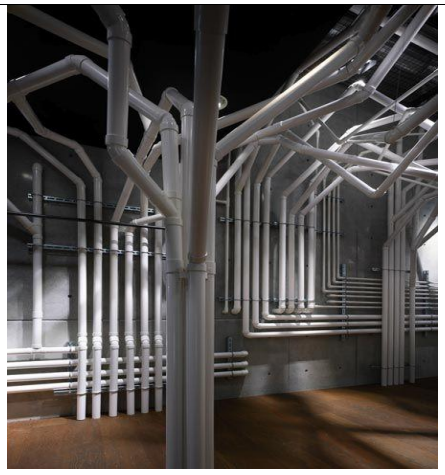
The trees have been from the beginning the main inspirational depot:

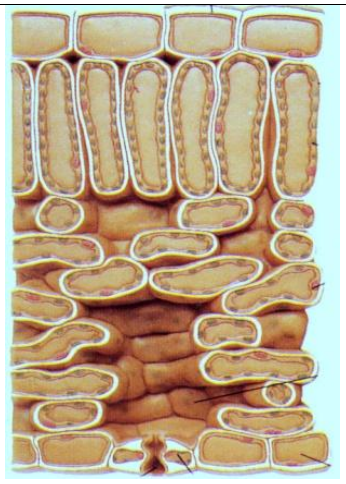




The sequence of hand sketches, the model, the aquarelles and sketchbook drafts guided to the three concept directions which prevailed in the designer's preference:

Concept A, the tube: The first model out of wood was constructed as the architect-designer was inspired from the architect Makoto Tanyiri from the Suppose Design Office and his "Nature Factory",2010, in Tokyo, or the transverse section of the leaf as from the Dictionary of Nature, mentioned in the book of Professor Tsinikas:






THE SOLAR ENERGY
COLLECTED DURING
THE DAY, OFFERS
A "IN THE NIGHT!
FOREST "FULL OF LIGHT,
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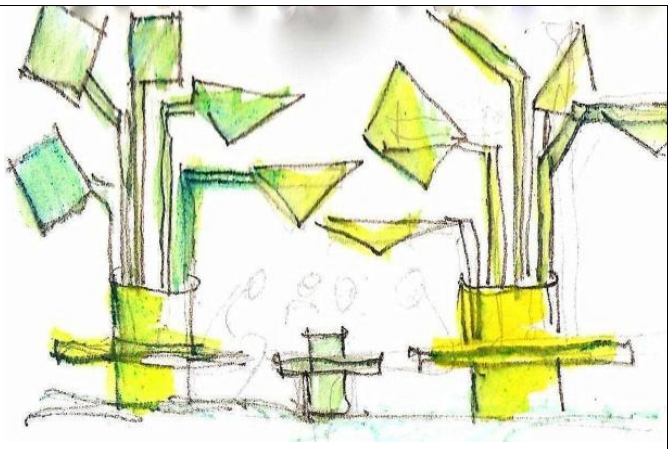
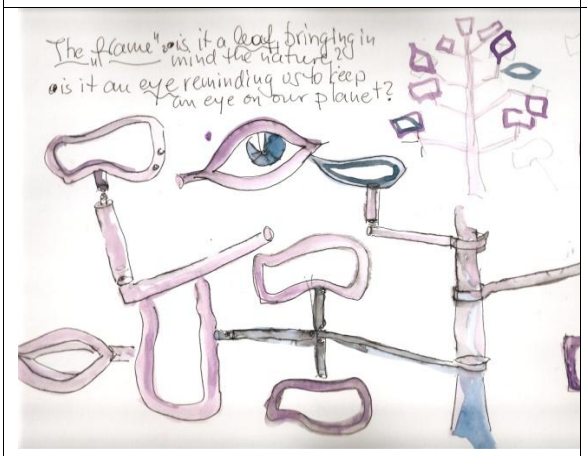
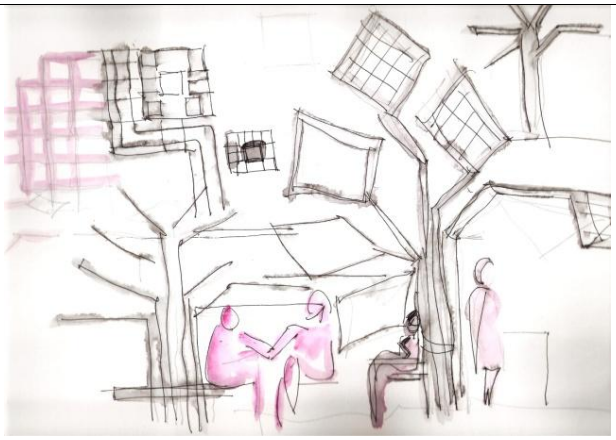
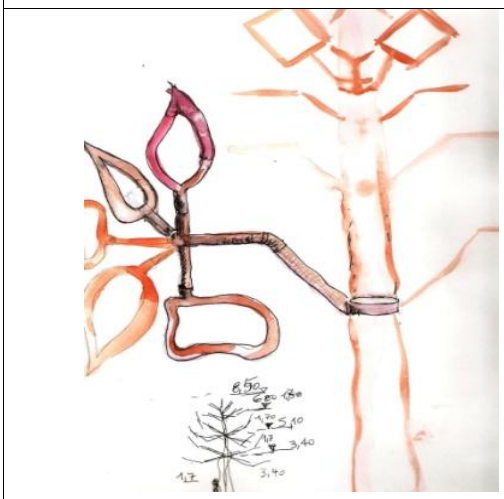


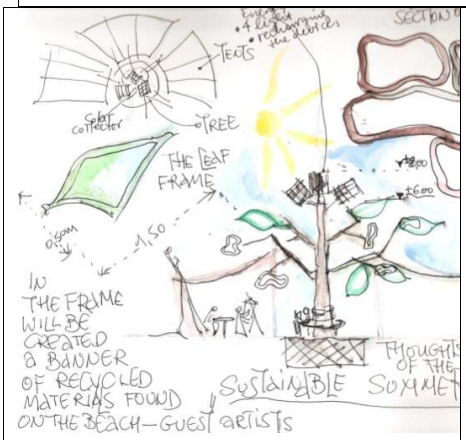

The frame" is it a leaf, bringing in
mind the nature?
is it an eye reminding us to keep
an eye on our planet?

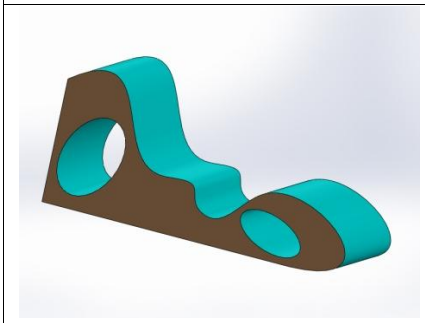


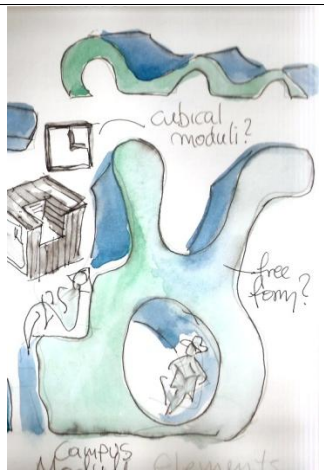



ΔΙΕΘΝΕΣ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΕΛΛΑΔΟΣ

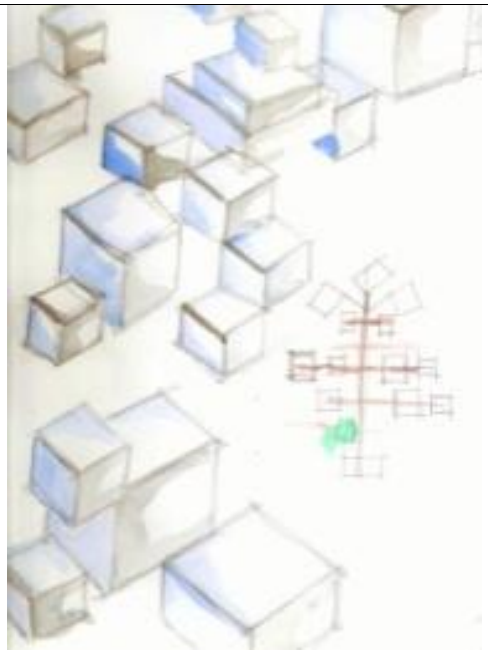
Concept B: the menorah tree, the organic free form sketches and CAD model:

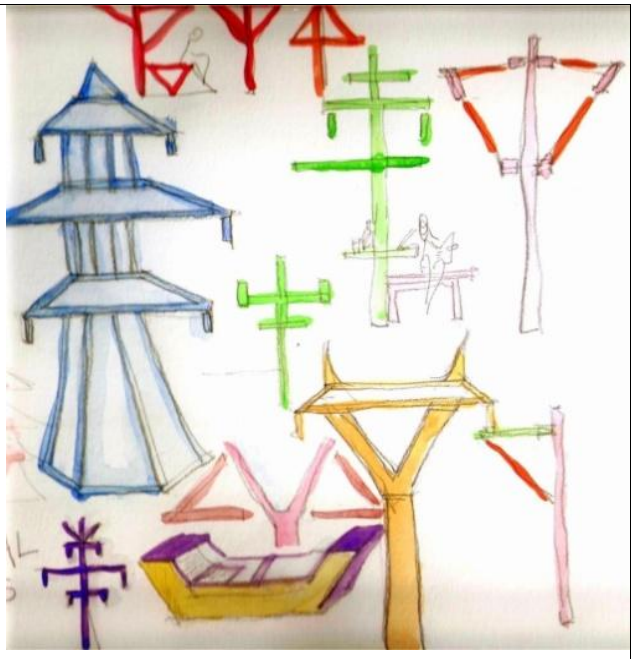


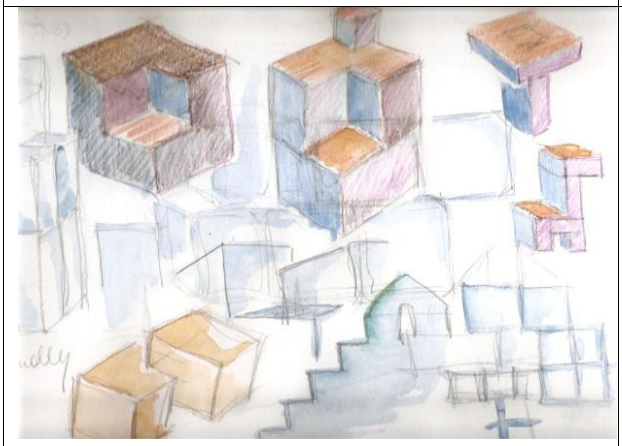


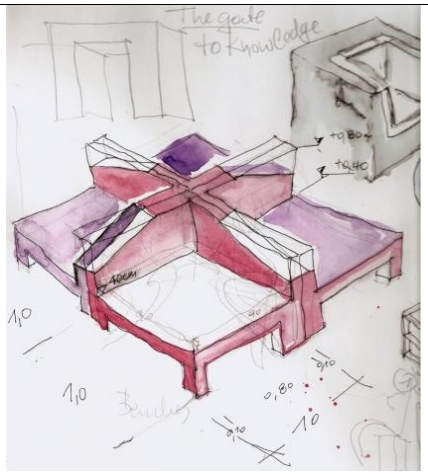


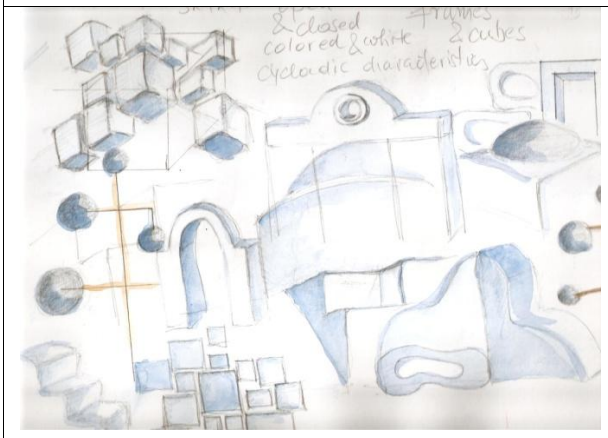
Concept C: the triangle, the Lego and Tetris units, the cubes, the Cycladic architecture influence:

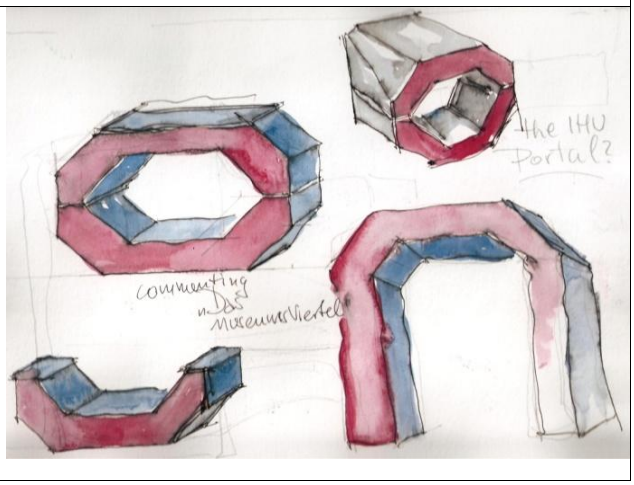


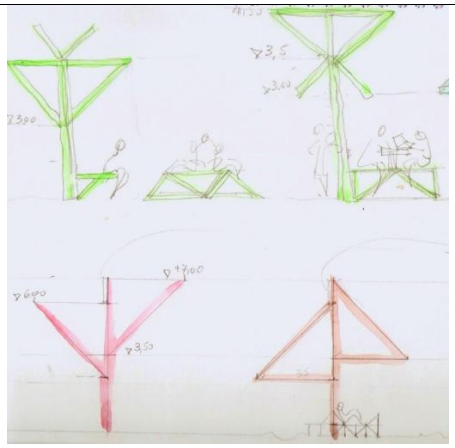


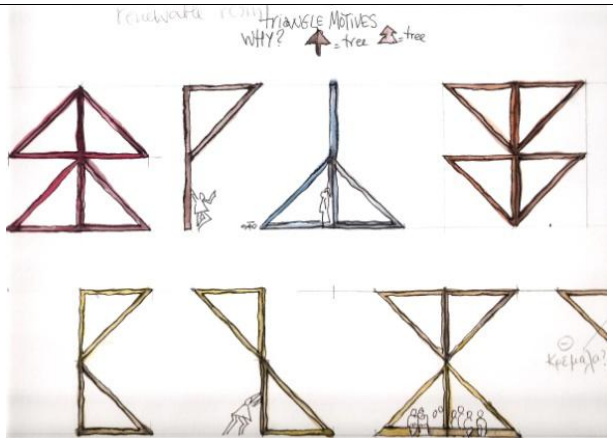




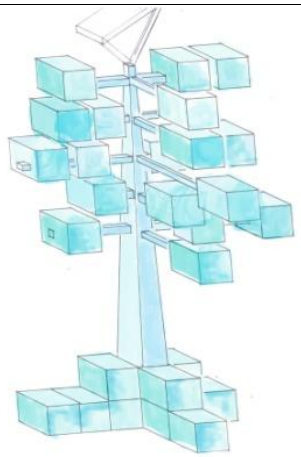


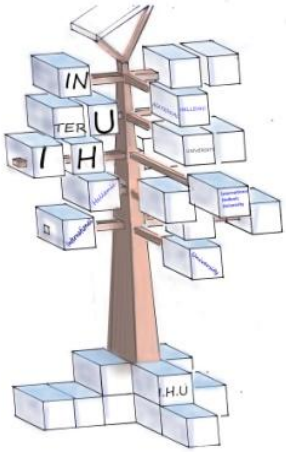


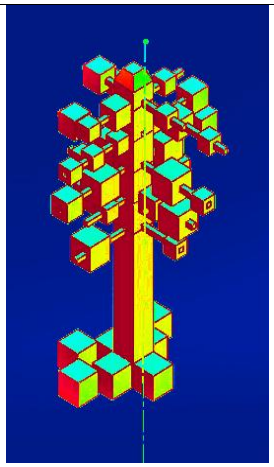


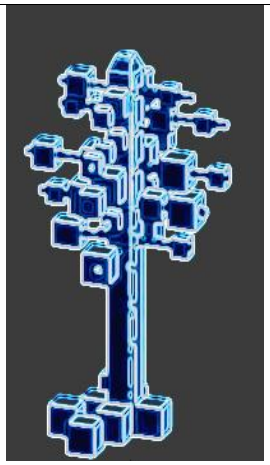


The first CAD models offered the rough shape of the solid:

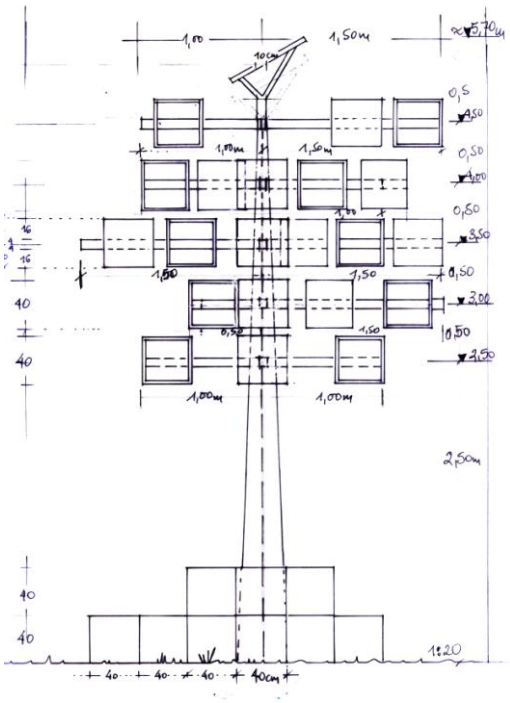


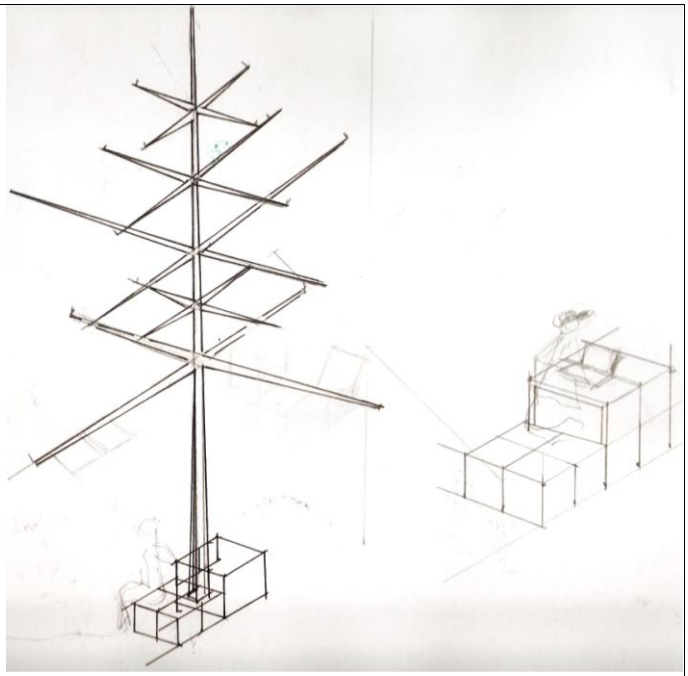


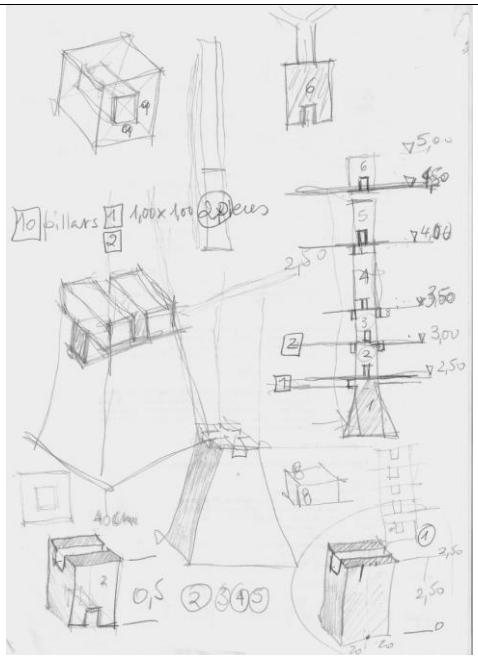


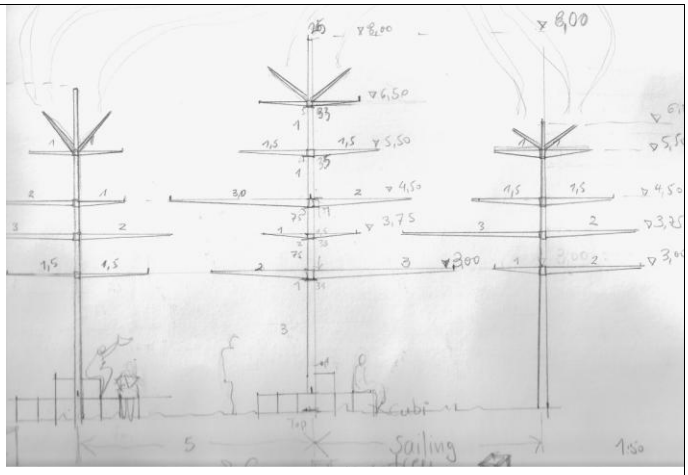


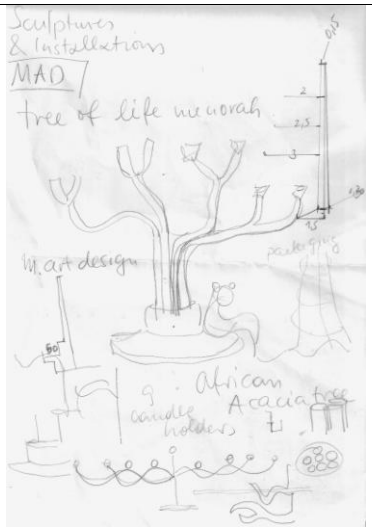
After developing the cube concept the Abacus concept was evolved and built in the golden ratio dimensions:

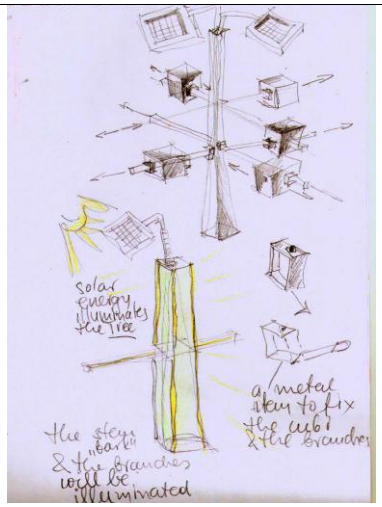


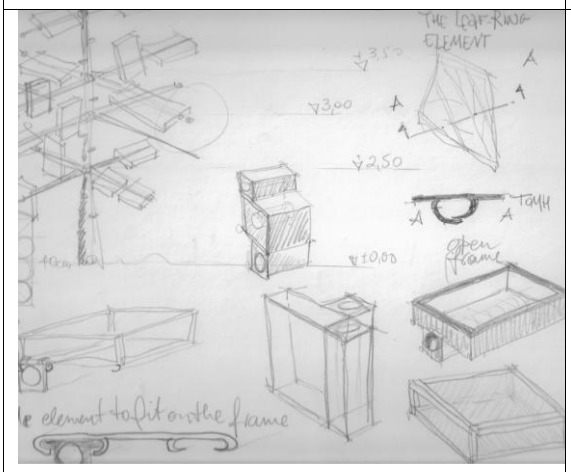


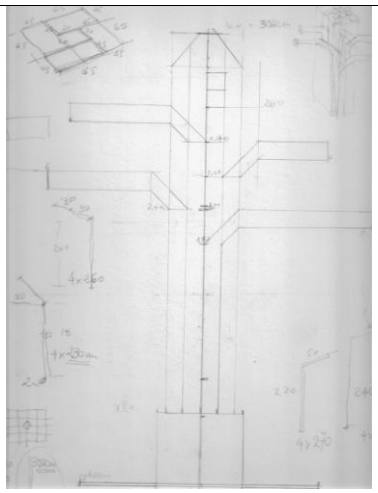

10 pillars
1,00x1,00
2 pieces
5,00
4,00
3,50
3,00
2,50
0,5

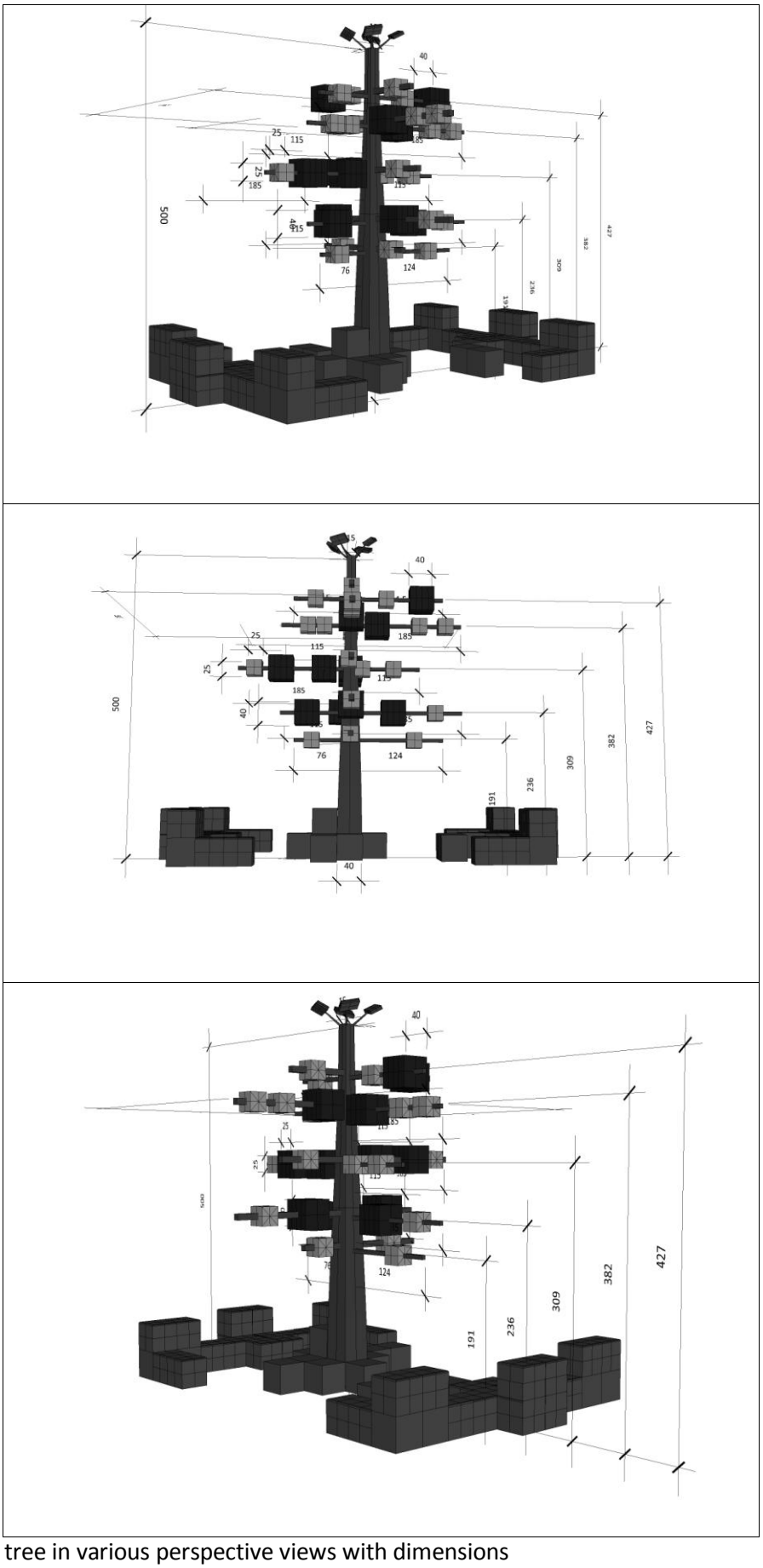

8,00
6,50
5,50
4,50
3,75
3,00
Sailing


Sculptures
& Installations
MAD
tree of life menorah
art design
9 African Acacia tree
candle holders

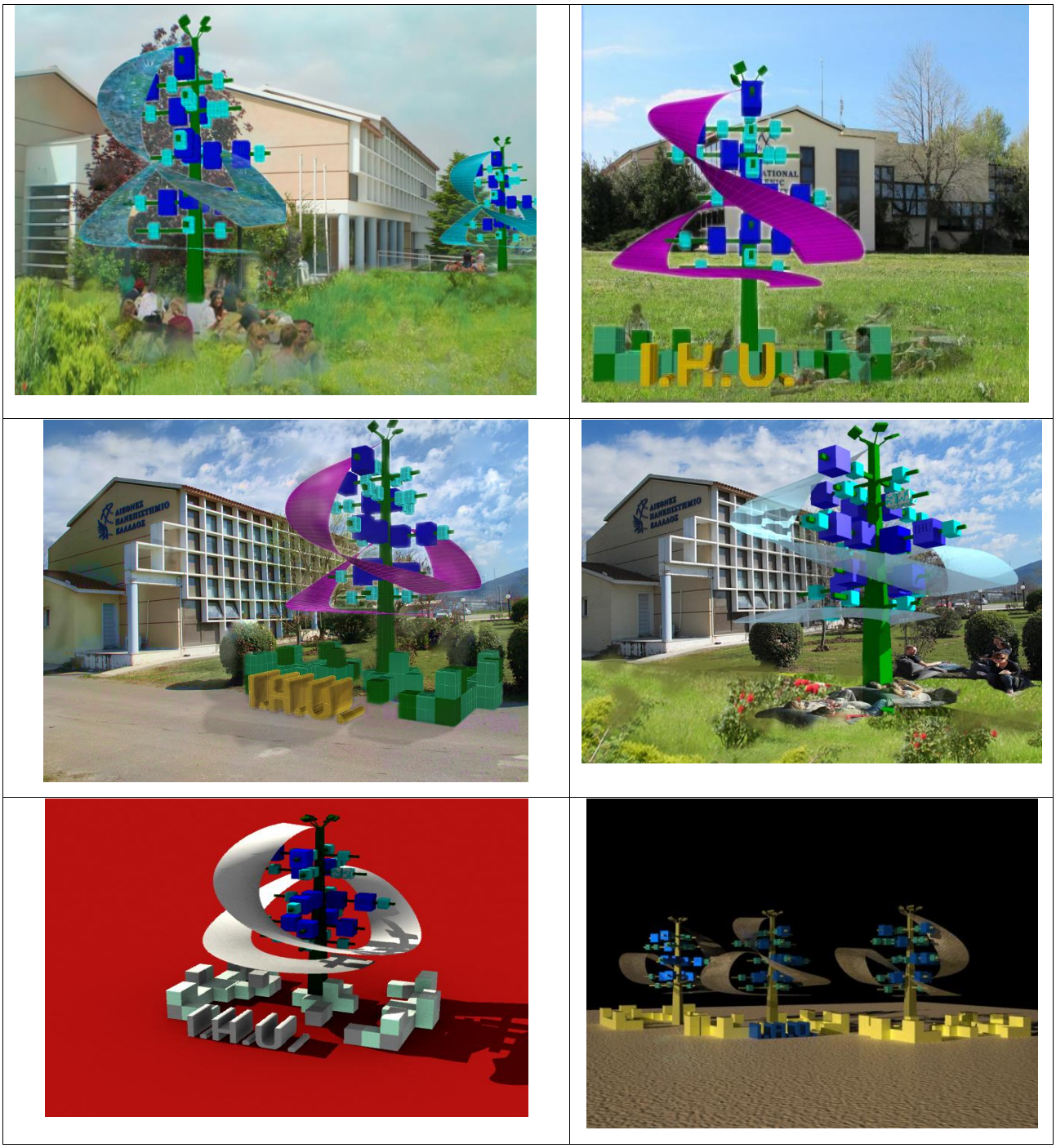

solar energy illuminates the tree
a metal stem to fix the cube & the branches
the stems, boards & the branches would be illuminated


THE LEAF RING ELEMENT
3,50
3,00
2,50
±0,00
open frame
element to fit on the frame

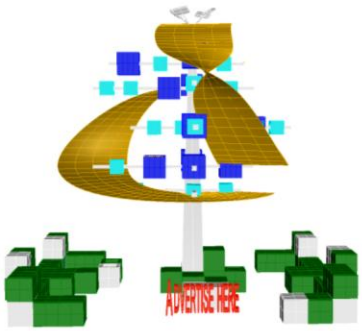


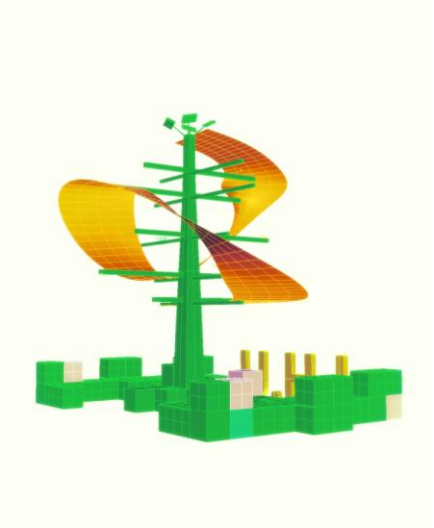


Picture: The Abacus tree in various perspective views with dimensions

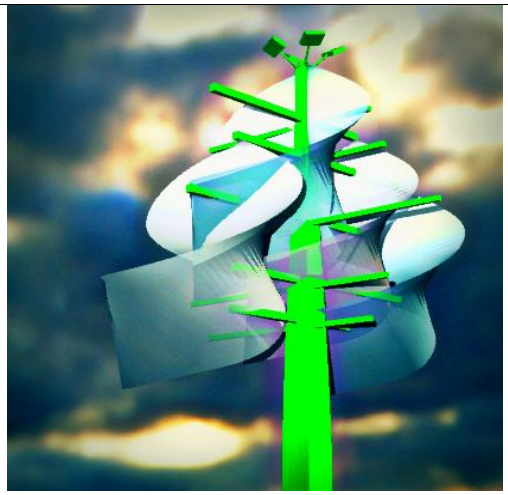


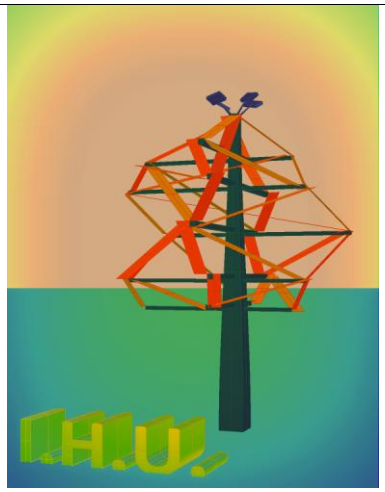
Picture: The Rhino models offered 3D perceptions of the Abacus tree that broadened the spectrum of uses and possible form, color and shape variations


ADVERTISE HERE




IHU




I.H.U.